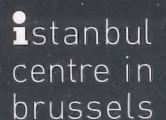


Istanbul: 8000 years

BROUGHT to DAYLIGHT

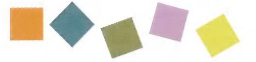
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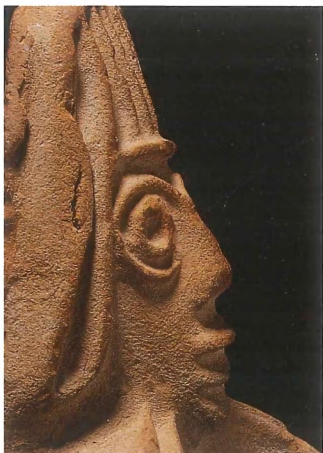


İstanbul: 8000 years

BROUGHT to DAYLIGHT

Marmaray, Metro, Sultanahmet excavations





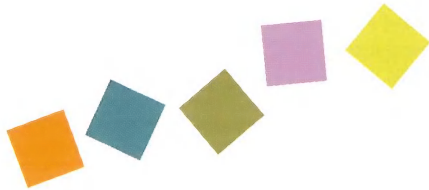




İstanbul: 8000 years

BROUGHT to DAYLIGHT

Marmaray, Metro, Sultanahmet excavations



Vehbi Koç Foundation

Istanbul: 8000 years
Brought to Daylight
Marmaray, Metro, Sultanahmet excavations

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Contents

9	Foreword. Ömer Koç
10	Excavations conducted under the auspices of Istanbul Archaeological Museums. İsmail Karamut
18	Marmaray Project and 8000 Years of Istanbul "brought to the daylight". Zeynep Kızıltan
22	A tribute to history and culture: "Marmaray". Haluk İbrahim Özmen
29	List of abbreviations
31-95	ÜSKÜDAR
34	The role of Chrysopolis in history as a colony city. Şehrazat Karagöz
54	Üsküdar square excavation as part of the Marmaray station project- grid-squares I BS/56-65. Şeniz Atik
64	Preliminary paleo-anthropological report on Istanbul / Üsküdar skeletons. H. Yılmaz, Z. Satar, I. Günay, İ. Baykara
70	Catalogue
96-123	SİRKECİ
98	Results of the excavations conducted in Sirkeci. Çiğdem Girgin
106	Marmaray Project Sirkeci station excavations: Byzantion. Süleyman Eskalen
108	Catalogue
124-163	FORMER SULTANAHMET PRISON
126	The Great Palace Excavation. Asuman Denker, Gülçay Yağcı, Ayşe Başak Akay
142	Catalogue
164-305	YENİKAPI
166	Architectural finds from the Yenikapı excavations. M. Metin Gökçay
180	Commerce in Istanbul and the Port of Theodosius. Rahmi Asal
190	Istanbul University Yenikapı Byzantium Shipwrecks Project: Documentation, lifting, conservation and reconstruction. Sait Başaran, Ufuk Kocabaş, Işıl Kocabaş, Ramazan Yılmaz
196	Istanbul University construction techniques and features of the shipwrecks in the Yenikapı Byzantine Shipwrecks Project. Ufuk Kocabaş, Işıl Özsait Kocabaş
202	Yenikapı Byzantine shipwrecks. Cemal Pulak
216	Daily life in Yenikapı. Gülbahar Baran Çelik
230	Faith in Yenikapı. Arzu Toksoy
236	Technology in Yenikapı. Sırrı Çölmekçi
242	The geoarchaeological significance of the ancient port of Theodosius at Yenikapı: Late-holocene environmental changes and the cultural history of Istanbul over the last ten thousand years. Oya Algan, M. Namık Yalçın, Yücel Yılmaz, Doğan Perinçek, Mehmet Özdoğan, İsak Yılmaz, Engin Meriç, Erol Sarı, Elmas Kırıcı Elmas, Demet Ongan, Özlem Bulkan Yeşiladalı, Günhan Danışman, Hadi Özbal
246	Forensic paleodemography of Byzantine. Mehmet Görgülü
252	Catalogue
306-327	COINS
308	Coins and seals. Turan Gökyıldırım, Sedat Öztopbaş, Betül Özden Tan
312	Catalogue



Foreword

On the occasion of The First International Sevgi Gönül Byzantine Studies Symposium, we take pride in presenting the exhibition *Istanbul: 8000 Years Brought to Daylight - Marmaray, Metro, Sultanahmet Excavations* at the Assos Hall of Istanbul Archaeological Museums between 26 June and 31 December, 2007. Designed with a view to introducing the public to the historic past of Istanbul, the exhibition presents the moveable cultural assets unearthed in the course of the archaeological excavations and test pittings conducted under the auspices of the Directorate of Istanbul Archaeological Museums in Üsküdar, Sirkeci and Yenikapı since 2004 and on the Former Sultanahmet Prison premises since 1997.

The exhibition sheds light on the eight-thousand-year-old cultural development of Istanbul and includes archaeological finds that extend from Prehistory to the Ottoman Period. We feel honored to contribute to the publication of the exhibition catalogue, which was put together by the excavation team members to ensure that the exhibition leaves a lasting impression.

On behalf of the Vehbi Koç Foundation, I would like to extend my appreciation for the contributions and efforts of all individuals who were instrumental in unearthing these valuable finds and bringing to fruition the design and preparation of the exhibition and the catalogue.

Ömer M. Koç

Excavations conducted under the auspices of Istanbul Archaeological Museums

İsmail Karamut*

As one of the important transportation projects of the world, the Marmaray Project aims to sustain a healthy continuation of Istanbul's urban life, to increase mass transportation capacity to preserve the natural and historic features of the city, to protect the environment by using electrical energy, to minimize individual transportation and dependency on auto routes, and to prevent the roads from being transformed into parking lots.

Through this project, the railway lines on both sides of the Bosphorus are to be connected with an underwater tunnel-railway that traverses the strait. The line will go underground in Yedikule, continue through the projected Yenikapı and Sirkeci underground stations, move across the Bosphorus under water, connect to yet another underground station in Üsküdar, and resurface at Söğütlüçeşme.

Prior to beginning excavation for this project, Istanbul Archaeological Museums was appointed to conduct the archaeological excavations in the projected construction areas.

The academic world recognizes that the movable and immovable cultural heritage unearthed in the course of archaeological excavations in Istanbul, a large city with a deep-rooted history, would make a large contribution to the city's archaeology and history and provide priceless information. It is also a fact that, in a bustling city where diverse cultures and civilizations are housed, it is rather difficult to conduct excavations and to document the excavated finds in compliance with the ethics and rules demanded by scientific research. Archaeological excavations in a living, evolving, dynamic city have always proved a difficult task.

Since the processes of assessment, *in situ* preservation or storage following documentation are at the discretion of the Regional Protection Boards (according to Law 2863), work has been coordinated with the relevant institutions, which - in turn - have been presented with the excavation results and their proper documentation.

The excavations of the Marmaray Project provide a perfect opportunity for us to shed light on the history of Istanbul. Had it not been for this project, we would not have access to any information on the immovable cultural heritage excavated at Yenikapı and Üsküdar, particularly on the ancient Byzantine Port of Theodosius and the shipwrecks buried in its mud bed.

Having mentioned the difficulties pertaining to archaeological excavations in the city, I find it necessary briefly to describe the process of the excavations. The

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Excavations



Yenikapı, or Langa Area, which we began excavating as part of the project, was the port area of Istanbul along the Marmara shores during the Byzantine Era. This area which is referred to in ancient sources and in several recent studies as the Port of Theodosius located between Mustafa Kemal and Namık Kemal Streets was the first phase of excavation. During the period of the development and expansion of the new capital city of Constantinople – founded by Roman Emperor Constantine the Great –, a good harbor could lead to a significant role in maritime trade. Recognizing this need, Theodosius I (379-395), built a harbor, which took his name, on the shores of the Sea of Marmara. Established to meet the city's increasing need for grain and other goods, the port remained active until the 7th century, when it lost its importance and began filling with the silt, deposits and debris carried by the Lycos (Beyrampaşa) Creek that poured into the harbor area. Until the end of the 11th century, the port continued to serve as a bay for sheltering small boats and fishing smacks. It probably silted up entirely in the 13th century.

16th-century writer, Petrus Gyllius (Pierre Gilles), offers detailed information on the port. After touring the area, Gyllius observed that the harbor was filled in and had been replaced by vegetable gardens and greenery, with a few scattered fruit trees. From the 1400s on, the harbor was referred to as a vegetable patch.

We began our Yenikapı excavation – the total area of which is 26,250 square meters – by dividing the area into three major zones. In the eastern zone, we started with 5 x 5 metre test pittings and expanded these in light of the architectural finds discovered. Naturally, we first encountered a stratum that contained Late Ottoman ceramic fragments. The architectural finds were built with the drystone wall technique. Based on the characteristics of the finds, we concluded that this area was used for making medicine and possibly indicated pharmacy workshops. Among the finds were a glass bottled filled with mercury and a bottle lid carrying a depiction of an enema.

The Regional Protection Board ruled that this area was to be preserved *in situ* and changes were made accordingly. With the Board's decision and to protect the area from natural conditions, it was temporarily covered to comply with the recommendation and supervision of the Directorate of Restorations. It was already known that the area was allocated to non-Muslim subjects during the Ottoman Empire, a fact shown by the discovered objects of daily use.

The numerous dressed-timber finds and thick pieces of rope discovered at the –1.10 metre level in this eastern section led us to expand the scope of excavations. Then a ship loaded with 11th-century amphorae was discovered at the Port of Theodosius. It became evident that the ship was wrecked along with its cargo and was eventually buried in fill as the harbor silted up. The finds we encountered confirmed the significance of our excavations and promised future discoveries in Istanbul archaeology and the history of Byzantium.

Once the general features of the shipwreck were established, we first met with Prof. Dr. Sait Başaran, Head of Department at Istanbul University's Department of Protection and Repair of Immovable Cultural Assets. As the documentation and the preservation of the shipwreck required expertise, we sought scientific help from Prof. Başaran. Later, we invited Texas A&M University faculty member, nautical archaeologist, and Vice President of the Institute of Nautical Archaeology, Assoc. Prof. Cemal Pulak to the excavation area. Dr. Pulak, who undertook the work following a protocol, documented the ship *in situ* and moved it to the conservation pool shortly thereafter. According to information Dr. Cemal Pulak presented, the length of the surviving remains is 6.5 meters. Based on data at hand, the original length of the ship appears to have been 10 to 12 meters. It has no deck and only a single mast. The boat was possibly constructed in the Marmara region and was altered prior to the wreck. It is believed to have sunk as a result of a storm or poor weather conditions. The iron anchors, which were quite valuable at that time, were discovered on the hull of the ship. During repairs, hundreds of wrought-iron nails were hammered into the ship, and its rail was raised to accommodate additional loads. The analyses confirm that oak was used mainly in its construction.

In addition to the excavations conducted by the Istanbul Archaeological Museums as part of the Marmaray Project, the metro project excavations of the Istanbul Metropolitan Municipality, which will be integrated into the Marmaray project, are carried out in the same area by the same excavation team. Since both projects are taking place in the area where the ancient Port of Theodosius is located, the movable and immovable cultural finds discovered in the two digs show certain similarities. At present, the total number of ships unearthed in both excavations is 24, and this number may increase in the near future. Among these are merchantmen of various sizes, small fishing boats and galleys with long oars. Before

re they are lifted using scientific methods by experts of the field, the ships are surveyed and documented. The ones moved to the waiting pool will be reconstructed following a special conservation, lasting five years. Afterwards, they will be ready for display.

So, once the ships are ready for display, where will they be exhibited? To answer this question, it was discussed at the first relevant Regional Board meeting after the first ship was discovered. The Board decided that it would be appropriate for the ships to be integrated into the station and to be displayed in the area where they were uncovered. Accordingly, a single museum project to display the shipwrecks was designed for Marmaray and the metro stations in the project areas.

Let us reiterate here that its naval fleet was what gave the Byzantine Empire its power. These shipwrecks provide valuable information about the methods of ship design and construction, load capacity and the conditions under which they operated. Following studies by experts, we believe that we will obtain priceless information on ships of the Byzantine fleets and techniques of ship construction in the Middle Ages.

The causes of the shipwrecks are another point of debate. Some scholars argue that being buried in sand indicates that the ships sank during a tsunami. Others argue that the amphorae aboard the ship are shattered and debris carried by sea is not mixed with that of land, so the shipwrecks are caused by storms. The day we can answer this question definitively will be the day the Yenikapı excavation turns a new page, not merely in the history of Istanbul, but in the history of the world as well.

During the digs in the area referred to as "Plot 100", to the west of the excavation site, architectural remains from the 4th to the 13th century AD have been unearthed. The most significant architectural ruin in this area is a wall 51 metres in length and 4.20 metres in width, made with cut-stones and "grog", or fired and crushed clay. Some scholars believe that this ruin is part of the "Constantine Wall," built by Roman emperor Constantine Maximus I (324-337). Since no further remains have been unearthed to date, there are conflicting views on the area through which the Constantine Wall extended. However, it is thought that new data about these ruins will be discovered in the course of ongoing excavations in the area. The greatest difficulty encountered during the Marmaray excavations of the Directorate of Istanbul Archaeological Museums and other archaeological digs in the city, is that the excavation sites are surrounded by dense development.

One of the most important finds in the area is a ruin –possibly a "potern" or tunnel– that can be dated to the 4th century AD. Inside this vaulted brick structure, 11 meters of which we can see, a significant number of pottery lamps have been discovered. Comparing this tunnel to other ancient sites, some researchers argue that this structure is possibly a sewage system. The presence of the pottery lamps supports the idea that it is, in fact, a "potern". Dated to the same period as the possible Wall of Constantine, a connection needs to be established between this ruin and the wall.

It is thought that other architectural remains in the area, the plans of which can be identified, are workshops. However, we do not currently have enough data to understand how these workshops were used.

There are remains of breakwater and quay stones at Plot 100. Immediately in front of the quay stones, timber piles stretch in two parallel rows for 43 meters, possibly forming a jetty extension of the quay. When we evaluate these finds as a whole, we understand that Plot 100 was located on the land side of the port, in other words on the waterfront. Dated to the 11th century by its construction techniques, remains of a *hypogeum*, or vault, and the remains of a wall from the reign of Theodosius II, featuring bricks impressed with Byzantine seals, are other important indications that the area was once located on shore.

Thanks to intermingled remains from different periods, historic development can be easily traced in this area, providing important information and data on the port and its environs. It has been declared by the Regional Board to be "an area to be preserved and used as an archeological park." Preservation projects have already been initiated. In the museum to be constructed in this area, passengers arriving at the Metro and Marmaray stations will have an opportunity to obtain information on the cultural assets discovered in the excavation of a historic port.

In the course of our work across the area on the east referred to as the First Zone, sediments that date back 8,000 years and ceramic fragments from the Chalcolithic and Early Bronze Age were encountered at the -6.60 metre level. While we hope that these finds will fill in some missing parts of Istanbul's prehistory, there is some question about whether these finds are *in situ*, or whether they were carried here from a different settlement by the waters of Lycos Creek. The large size of the terracotta fragments, as well as their sharp edges without erosion, give weight to the possibility that "there was indeed a

settlement here." The formation of the infrastructure of a certain design and plan with large sea stones and vertically-installed timber architectural elements between them further support our theory that houses from the Chalcolithic period were located in the excavation area. All finds have been documented.

The stratified nautical infill between the 11th century AD shipwrecks and the architectural remains from the Chalcolithic period serve as priceless sources for understanding the transformation of the Marmara Sea in the last ten thousand years. Geo-archaeological research conducted in this area will provide significant contributions both to our understanding of Neolithic settlements, traces of which have not previously been encountered on the northeastern shore areas of the Marmara Sea, and to reveal changes in the sea level during the late Holocene Age.

To study the changes at the mouth, on the bed and along the shoreline of Lycos Creek and to identify the factors that caused the submerging of settlements from the Neolithic and Chalcolithic periods, a project entitled, "A Geo-Archaeological Research at the Ancient Port of Yenikapı / Studying a 10 Thousand Year-old Cultural and Geological Heritage in Istanbul" has been designed with the collaboration of Istanbul University, the relevant departments of several universities and Istanbul Archaeological Museums. In addition to the movable and immovable finds discovered at the Yenikapı digs, numerous human and animal skeletons have been encountered. Among these, groups of decapitated human skeletons are of particular interest. After study by anthropologists, these skeletons will perhaps offer us important information about the late periods of this area. The animal skeletons, meanwhile, are currently being studied at the Veterinary School of Istanbul University.

Collaborating with diverse scientific disciplines in archaeological excavations is a prerequisite for correct interpretation of finds and for accessing the right information. Timber fragments and timber samples from ships unearthed in different parts of the Yenikapı digs have been delivered to specialists in their respective fields for study. We believe that once these timber samples can be dated, we will obtain important data about the function and periods of the movable and immovable cultural heritage of the Yenikapı excavations. The results obtained thus far confirm this view.

The movable cultural heritage from the excavations shows great diversity in terms of period and material.

Considering that the excavated area served as a port in Antiquity, such diversity is quite natural. The infill of the harbor during the Ottoman Period with soil brought from different areas further increases this diversity. Among the finds –most of which are seafaring tools– are terracotta ware for daily use, numerous coins of different metals, leather sandals, pottery lamps, metal objects, wooden combs, cup fragments decorated with human and animal depictions, and tile and ceramic fragments from the Ottoman Period. At the workshops on site, the finds with intact pieces are reconstructed, and following the conservation process, they are transferred to the Archaeological Museums.

The archaeological excavations at Üsküdar Square, another station of the Marmaray Project, commenced in October 2004 and are nearly completed.

Üsküdar has gone by different names at various periods in history. Its ancient name was Chrysopolis meaning "the city of gold." This name, according to various sources, was used during Persian rule (after 513 BC) because the city's gold was collected here.

During the Roman period, Üsküdar was called Scutari. Geographer Strabon of Amasya (ancient Amaseia) is among the writers of Antiquity who refer to Üsküdar by this name.

Maintaining its importance as a passage between Europe and Asia through the centuries, Üsküdar is described in some ancient sources as a village, while others call it "a city with a dense population".

In his work *Asie Mineure. Geographique, Historique et Archeologique Des Provinces et Des Villes De Chersonese D'Asie* (Asia Minor - Geographical, Historical and Archaeological Description of the Provinces and the Cities of Chersonnèse of Asia), French traveller Charles Texier, offers important facts about Üsküdar, writing, "Washed by the waters of the Bosphorus from Kadıköy to the mouth of the Black Sea, the Asian shore stretches from the north to the south without any deep bays. Ships can dock at the bay of Scutari, which was once deep and was eventually filled in for housing development," emphasizing that there once was a bay here.

In short, we learn from the sources that this area was once an important port and a bay, later filled in for housing development. According to Texier, Pierre Gilles saw the debris from the mosque commissioned by Sultan Süleyman's daughter on the Asian shore being deposited into this bay. He further claims that some of the stones from the breakwater built to resist the strong currents

were still visible on the seabed. The mosque that Gilles speaks of is the extant Mihrimah Sultan Mosque. Sources also reveal that, in the ensuing years, refuse from the dig of the Yeni Valide Mosque were dumped in this area, which still preserved its appearance as a bay in 1710.

According to Prof. Dr. Semavi Eyice's research, in all of Üsküdar, the presence of only one monastery from the Byzantine era is known. It is argued that the structure referred to as the Chrysopolis or Philippikos Monastery is that structure. After the 10th century, the name of this monastery is not encountered in Byzantine sources; its location in Üsküdar is unknown to date.

We learn from written sources that the pier square at Üsküdar was gradually filled in throughout history. The excavations confirm that this area was filled in over time and was used for housing development.

The remains from the foundation of an Ottoman bazaar have been discovered during the excavations at Üsküdar Square, the ancient history of which we mentioned briefly in the preceding pages. The presence of this bazaar was also referenced in various early sources. According to these sources, the bazaar belonged to the Rum Mehmed Paşa endowment. Since the Paşa's year of death is 1470, the bazaar must have been built prior to this date to provide income for the mosque and its complex. According to the author of *Mirat-ı İstanbul*, the bazaar had nearly 50 shops. The bazaar was removed in its entirety in 1956. Drawings of the excavated ruins with discernible plans have been made; building surveys have been prepared and documented. In the same area, architectural remains from a tannery indicated on the Pervititch map have been unearthed. This must be one of the two tanneries mentioned in sources. In line with the recommendations of scholars, some of the wooden barrels that feature ethnographic characteristics of the tannery, have been documented and moved by experts from Istanbul University's Department of Restoration and Repair for study and display in a leather museum to be established in the future.

In the course of our work, all the architectural remains from the upper stratum were unearthed, while the lower strata were accessed by test pitting. A depth of -7 metres has been accessed during test pitting. Archaeological materials have been found within the filled dirt of this level. Although architectural fragments from the Byzantine and prior periods have been unearthed during the digs, a plethora of Roman, Late Roman, and Byzantine pottery lamps, as well as Byzantine seals and coins have been discovered below approximately -4 metres. These

findings indicate the following: as revealed in ancient sources, this area was formerly a bay, but it was filled in between the 16th and 18th centuries for housing development and construction was carried out in the area where architectural remains are found today. The discovery of a raft foundation set on piles is further proof that the area did not have firm soil in previous centuries and that it was created by infilling of the sea.

In the works conducted on the upper strata of the area, remains of Tekel buildings -as indicated on the Pervititch map- from the 1930s and after have been encountered.

According to the decision (number 442, dated 22/03/2005) of the Istanbul 3 Regional Board for the Protection of Cultural and Natural Heritage, "In the BS/56-65 grid- squares where work is completed, the finds must be lifted in layers, with the use of light excavation machines when necessary, under the observation and supervision of Istanbul Archaeological Museums. Furthermore, implementation in the area of the Marmaray Üsküdar Station as previously presented to the Regional Protection Board can be initiated. In addition, it is known that the remains of the reinforced concrete foundations of the Duhan tobacco warehouse and the Tekel tobacco warehouses around the I/7-8 grid-squares located on the former seaside strip to the east of Şemsi Ahmet Paşa Mosque have been unearthed. Small extant buildings and remains as well as the remains of a former boat and caulking yards have been encountered in this area. No architectural remains in need of preservation have been unearthed. This area was formerly melon fields and vegetable gardens as seen in the 1932-1933 Pervititch insurance maps. It has, therefore, been decided that in the area where the grid-squares are located, work on the below-ground Marmaray Üsküdar Square Station can be initiated under the supervision of Istanbul Archaeological Museums."

Following documentation, the architectural remains were removed with care. The movable cultural assets unearthed in the digs have been moved to Istanbul Archaeological Museums, following workshops as in the Yenikapı excavations.

The excavations in Üsküdar are not confined solely to this area. As part of the project in progress, digs were also conducted in the displacement areas designated for the transfer of the infrastructure unearthed in the areas where excavation has been completed. The finds discovered in the displacement area digs near the Fountain of Ahmet III

and Mihrimah Sultan Mosque yielded significant results, particularly of the Byzantine history of Üsküdar.

The excavated ruins of an apsidal building's foundation indicate that the area was no longer a bay but a part of the shoreline since the excavation results reveal that the structure was not built upon any form of infill. The plan scheme and the materials used in what we believe to be the foundation of a religious structure, suggest that the apsidal building was constructed between the 12th and 13th centuries AD.

The presence of a separate temenos wall outside the rectangular structure makes it even more intriguing. This religious structure must be a church, a chapel or a *martyrion*. It should also be noted that the structure is not directly on an east-west axis. More than 25 skeletons unearthed from inside the structure and the area between the structure and the temenos wall have been documented and removed. The skeletons have been sent to Ankara University Faculty of Linguistics, History and Geography's Department of Anthropology. It can be observed that during the construction of the structure, the walls were built in a way that includes the knees of some of the skeletons, yet in a manner that protects their integrity. From this, we can conclude that the apsidal structure was constructed some time after the skeletons were buried. Detailed studies continue on this structure, which we believe will provide significant information about the history of the Byzantine Period.

Important finds have also been unearthed in the digs at the displacement line in progress near the Fountain of Ahmet III. The monobloc stone rows that we encounter indicate that this area was outside the infilled bay but located on its waterfront. The stone rows possibly point to the presence of a jetty on the bay's shore. We cannot follow the entire path of the monobloc stones, for they continue towards the area below the Fountain of Ahmet III.

When we consider the proximity of the monobloc stone rows and the apsidal structure and their locations in the area as a whole, we obtain information that helps determine the shoreline between the land and the inlet.

The digs that continue within the borders of the displacement area continue to present us with striking finds. Parallel, kiln-dried and bituminized timber logs discovered at a depth of -0.50 metres constitute a pier. Nails of various sizes and timber joints have been used at the fastening points of the logs located at the point where Bül-bül and Çavuş creeks converge. As small finds, sherds of

Byzantine pottery have been discovered in areas around timber formations that resemble ship construction techniques of Antiquity. Based on the data available, it appears that these *in situ* remains can be dated to the Byzantine Period. In compliance with the decision of the Regional Protection Board and the reports and recommendations of the Directorate of Conservation, the finds have been covered with a unique system to protect them against adverse weather conditions for the time being.

Apart from the immovable cultural assets discovered at the displacement line of Üsküdar Square, when lower strata have been accessed through test pitting, archaic pottery sherds have been found. Although there are no architectural remains from the Archaic Period, these small finds may point to an Archaic Period settlement in the area. Çavuş and Bül-bül creeks must have washed the finds to this area.

The Regional Protection Board has responded to the question of how the small finds from this excavation will be used. Their decision, as in the case of Yenikapı, is to display the small finds unearthed in the Üsküdar excavations in a museum building to be included in the Urban Design Project underway at Üsküdar Square.

Naturally, displaying the finds discovered in the Yenikapı and Üsküdar digs at the location where they were unearthed, upholds the currently popular view that "cultural assets should be made use of in the areas where they are discovered."

The archaeological work undertaken as part of the Marmaray Project at the northern and southern entrances of the Sirkeci Station and the eastern and western shafts should be regarded as an opportunity to determine the stratigraphy of a city, such as Istanbul, with dense housing development.

According to ancient geographers of the Historic Peninsula of Istanbul as revealed in ancient sources, both shaft areas (western shaft: Hocapaşa, eastern shaft: Plot 14) are located around the ancient harbor. Established circa 680-660 BC as a Megaran colony, its location at the Bosphorus exit made Byzantium an important port by the 6th century BC. It is assumed that the port, which maintains its significance today, was silted up over a period of 2500 years, and the ancient harbor was located approximately 250 metres behind the Sirkeci area and 150-200 metres behind Eminönü with respect to the present shoreline.

Following the 2004 geological test pitting, a depth of -11.50 metres, and -12.70 metres has been accessed

in the western and eastern shafts, respectively. The cultural strata observed during studies of the dirt removed from screw piles confirm the geological test pitting. When the finds are evaluated from the top to bottom levels, a historical process beginning in the 6th century BC and continuing to modern times is obtained.

The first stage of works in the western and eastern shaft areas has been completed. The first stratum we encounter has the features of a cultural phase from the Ottoman Period. The immovable architectural heritage in this stratum is thought to be dated to the late Ottoman Period. 19th and 20th century Istanbul maps support this view. Identifying the stratigraphy in this area will only be possible after documenting and removing the upper stratum and accessing the lower strata. There is a Regional Protection Board decision regarding this issue. Accordingly, the finds from the digs conducted in both shaft areas reveal important new discoveries about the geography where Byzantium was founded and from which the Ottomans ruled their empire.

Excavations conducted by Istanbul Archaeological Museums southeast of Hagia Sophia within the garden of the Former Sultanahmet Prison since 1997, have revealed significant movable and immovable cultural assets. This area, which encompassed a portion of the Great Palace of the Byzantine Period, is of particular importance due to its proximity to the Augusteion (Hagia Sophia Square), the Hippodrome and Hagia Sophia.

Discovered during the construction of the Dar-ül Fünun building, the upper jaw of one of the serpent heads from the bronze spiral column located at the center of the Hippodrome and the inscribed pedestal from the silver sculpture of Emperor Arcadius's wife Eudoxia, are among the finds that underline the significance of the area.

During the excavation, a 6.20 metre wide monumental gate entrance to the Augusteion Square was identified. It is believed that this gate is the "Chalke Pule" or the Bronze Gate mentioned in *The Ceremonial Book of Constantine VII Porphyrogennetos*. Among the ruins unearthed in the excavation area are important building complexes such as the meeting rooms of the imperial councils and the audience halls for ambassadors.

The remains from the Dar-ül Fünun (University) building that Sultan Abdülmecid commissioned to the southwest of Hagia Sophia contain important information about the use of the area in the Ottoman Period. This building was designed by the Swiss architects the Fossati

Brothers, who arrived in İstanbul in 1846 to restore Hagia Sophia.

This area, which borders Hagia Sophia and the Topkapı Palace reveals important data about the Byzantine and Ottoman history of İstanbul. It is expected to open for visitors as an "Archaeological Park" in compliance with the decision of the Regional Protection Board. The repair and preservation of the unearthed architectural remnants should be a priority.

Small finds discovered during the excavation are priceless sources of information that shed light on the historical development of İstanbul.

Modern development and the preservation of cultural heritage are not mutually exclusive; one need not be sacrificed to support the other. Cultural heritage must be respected and preserved as part of the historic and cultural environment. The information that the archaeological strata have to offer must not be destroyed at any cost. When it becomes necessary to interfere with the urban texture to better modern life, this historical knowledge should not be lost, but rather revealed and presented to the public.

This is precisely the aim of the excavation work conducted as part of urban archaeology. Scholars from various disciplines make significant efforts in this cause. Starting with the workers who took part in the excavations, I would like to thank everyone who so carefully contributed to and showed a heightened consciousness of the promotion and display of our cultural heritage.

Marmaray Project and the 8000 years of Istanbul "brought to daylight"

Zeynep Kızıltan*

There is no doubt that through the Marmaray project exhibition, Istanbulis will soon be able to solve the mystery behind the metal curtains throughout the city. The Marmaray Project, which was tendered by the Ministry of Transportation, is the name given to the tube-tunnel project designed to improve the commuter lines of Gebze-Haydarpaşa and Sirkeci-Halkalı. Upon the completion of the project, urban transportation will be greatly improved and short and uninterrupted transportation will be provided between Gebze and Halkalı. Designed to solve Istanbul's transportation problem, the project also sheds light on the city's rich and complex history.

A relatively short but significant portion of the Marmaray Project, which traverses the city from east to west, passes through the Historic Peninsula. This is why, since 2004, archaeological excavations have been conducted under the auspices of Istanbul Archaeological Museums in the Sirkeci and Yenikapı quarters within the Historic Peninsula, as well as the Üsküdar area. Furthermore, Istanbul Metropolitan Municipality's Metro Project is concurrently in progress in Yenikapı. As part of this project, archaeological digs are underway in the area adjacent to the Marmaray Project in Yenikapı.

In the course of the archaeological digs conducted by Istanbul Archaeological Museums as part of the Marmaray and Metro projects, the daily lives, belief systems, technologies and architecture of the urban dwellers who lived on the waterfront behind thick city walls during the Roman and Byzantine periods, in houses made with wattle-and-daub and wooden stakes during the 6th millennium BC, and set sail across the seas, are carried to the present, bringing to the light of day eight thousand years of Istanbul. In order to present to Istanbulis the finds discovered in the excavations conducted by our museum since 1997 within the garden of the Sultanahmet Former Prison and to shed light on the history of the city, Istanbul Archaeological Museums envisaged a temporary exhibition. This idea was brought to life through an exhibition project entitled, "Istanbul: 8000 Years Brought to Daylight- Marmaray, Metro and Sultanahmet Excavations" as part of the First International Sevgi Gönül Byzantine Studies Symposium. Designed with the aforementioned goals, the exhibition is comprised of a consecutive taxonomy of finds from the Üsküdar, Sirkeci and Yenikapı station excavations, in the order in which they appear as stations within the Marmaray Project. Although the Sultanahmet dig is not a part of this project, the location of the area at the heart of Byzantium

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and the prominence of the finds from the 2007 digs have included this area in the exhibition.

Designed with finds unearthed in digs conducted in four different areas, the entrance to the exhibition displays the technical dimension of the Marmaray Project brought to life by the Ministry of Transportation. Information panels in this area present the collaboration of mechanical power and human intellect through photographs.

Focusing on the Üsküdar excavations conducted under the supervision of Archaeologists Dr. Şehrazat Karagöz and Dr. Şeniz Atik with the participation of Archaeologist Ece Işık, the first section of the exhibition displays –in a chronological and thematic taxonomy– finds discovered in the late Ottoman "arasta" bazaar, the tannery and the foundations of the building with a grid plan, and the Byzantine apsidal structure and the surrounding areas, as well as Classic, Archaic, Hellenistic and Roman finds identified in test pittings. The data obtained from the archaeological digs held in Üsküdar and Üsküdar Square, which has maintained its significance as a hub between Asia and Europe throughout centuries, confirm the information in ancient sources. The 80 human skeletons unearthed during the Üsküdar excavations inside the apsidal structure from the Byzantine period and the surrounding areas are currently being studied by Ankara University Faculty of Linguistics, History, Geography's Department of Anthropology. The preliminary reports of these studies are included in the catalogue.

The second part of the exhibition focuses on the Sirkeci excavation initiated in 2005 under the supervision of Archaeologist Çiğdem Girgin with the participation of Archaeologist Süleyman Eskalen. Conducted in four different areas in Sirkeci, namely, within the Sirkeci Train Station (Northern Entrance), in Cağaloğlu (Southern Entrance), in Hoca Paşa (Western Shaft) and behind the Sirkeci Train Station (Eastern Shaft), foundation remains from the Ottoman and Byzantine cultural strata as well as finds dated to the same periods have been discovered. The 3rd and 4th century BC pottery discovered at a depth of 15 metres in the Eastern Shaft, stamped handles dated to the same period, the head of a sculpture dated to the Roman period, Byzantine kiln components, as well as Iznik-Milet tiles and Ottoman pottery are among the prominent objects displayed in the exhibition. Particularly the stamped handles emphasize Byzantium's ties with the islands of Thassos, Rhodes, Chios and Kos as well as Knidos, Sinop and Karadeniz Ereğlisi.



The third section of the exhibition consists of finds from the Former Sultanahmet Prison excavation to the southeast of Hagia Sophia, which was initiated in 1997 and continued in 2005 under the supervision of Archaeologist Asuman Denker and with the participation of Archaeologist Bekir Tuluk. This excavation is particularly important due to its location in an area filled with significant Byzantine-Period structures such as Hagia Sophia Square, the Great Palace, the Hippodrome and the Church of Hagia Sophia. In the exhibition, finds discovered in the Ottoman, Byzantine and Roman strata as well as Hellenistic and Roman artifacts uncovered in wells, are displayed in a chronological and thematic fashion, as in the other sections. The bowls from the Hellenistic Period and kitchenware from the Roman Period, in particular, provide information on the culinary cultures of these civilizations.

The fourth and final section of the exhibition displays finds from the Yenikapı excavation where Constantinople's Port of Theodosius was discovered. As the largest station within the Marmaray and Metro project, Yenikapı sprawls across an area of 58 thousand square metres. Excavations in Yenikapı began in 2004 under the supervision of Archaeologist Metin Gökçay with the participation of Archaeologists Gülbahar Baran Çelik, Sırrı Çölmekçi, and Arzu Toksoy. During the excavations conducted in the first zone of this area, which was used as a port during the Byzantine Period and as an agricultural area, known as the "Langa Vegetable Gardens" during the Ottoman Period, pottery sherds from the earliest Neolithic-Chalcolithic and Early Iron Age and foundation remains from the Neolithic Age have been discovered. In digs across the other zones in this area, foundation remains from Ottoman and Byzantine periods, and particularly Byzantine walls, gates, secret passageways, and remains of jetties and docks have been identified.

The Port of Theodosius was built during the Byzantine Period at the point where Lycos Creek along the Marmara shore poured into the sea. It remained an important commercial port until the 7th century. The remains of the Port of Theodosius were discovered in the course of the excavation. Silted up by the deposits carried by Lycos Creek over time, the port area is replete with remains of old shipwrecks, reels, tackles, anchors, and countless amphorae. A portion of the finds discovered aboard and around these ships is included in the exhibition. Finds from the first shipwreck, which appears to have sunk with its cargo, are displayed in a separate group.

Finds from the Yenikapı digs are displayed in a thematic and chronological order under the headings "Daily Life", "Commerce", "Technology," and "Faith".

In the "Commerce" section, red-slip and red-painted plates originating in North Africa, commercial amphorae from the Eastern Mediterranean and Africa, pottery lamps from Anatolia and the Balkans, and amphorae and plates decorated with impressed motifs from the Aegean are exhibited.

The "Technology" section includes iron and stone anchors that offer information on the technologies used in seafaring, fishing and daily life of the period, lead weights for fishing lines and nets, bronze netting needles, fishing line hooks, as well as organic finds such as a wooden bow drill and combs.

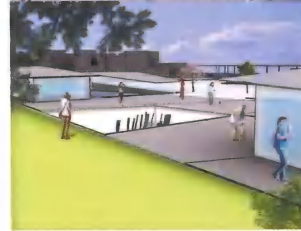
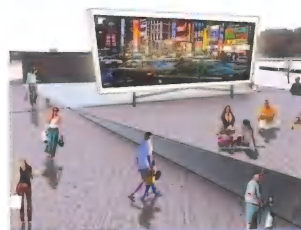
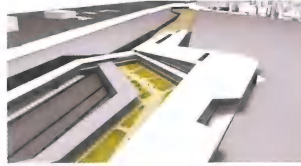
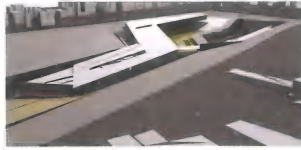
The concept of religion, the influence and power of which is prevalent in any given period, played a significant role during the Byzantine Period. A portion of the artifacts gathered under the heading "Faith" were discovered inside and around the church structure unearthed in the metro dig area. Among these are bone and bronze crucifixes, teardrop bottles, and plate fragments from the Ottoman Period.

"Daily Life" presents visitors with objects used as part of the daily life in the city during the Byzantine and Ottoman periods.

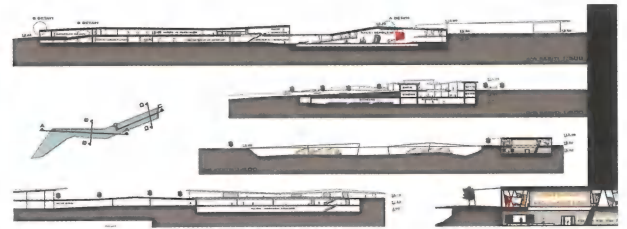
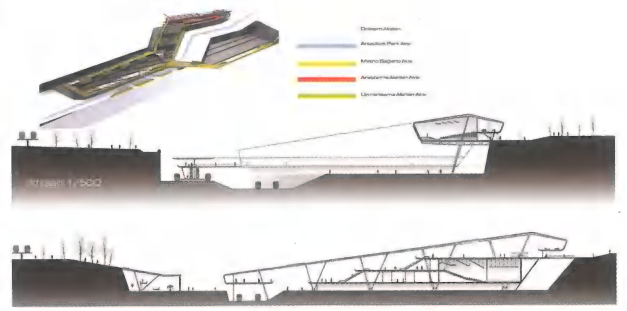
Prior to 1 June, 2007, 24 shipwrecks dated from the 7th to the 11th centuries were discovered at Yenikapı. Some portions of these ships are intact, whereas others have disintegrated. Whether these ships sank due to severe storms or a post-earthquake tsunami will be determined following the scientific studies of specialists. Coins from the Roman, Byzantine and Ottoman periods discovered in the Üsküdar, Sultanahmet and Yenikapı digs are displayed alongside the artifacts of each section.

The "Istanbul: 8000 Years Brought to Daylight- Marmaray, Metro and Sultanahmet Excavations" exhibition is born out of the collaborative efforts of an extensive team. I would like to extend my thanks to Istanbul Archaeological Museums Former Director and Head of Excavations Dr. Ismail Karamut for his meticulous work in unearthing the finds, to Deputy Director and Excavations Supervisor Rahmi Asal and his team, to team members who contributed to the exhibition process with their academic and research experience and expertise in museology, to Ersu Pekin and Ahmet Mustafa Özgüner who were inspired by the station and tunnel projects in the design of the exhibition, to catalogue editor Arzu Karamani Pekin, to Hadiye Cangökçe for her photographs, to DLH Istanbul Regional Director Haluk İbrahim Özmen, who supported us and provided access to DHL's visual archives, as well as to Sema Yılmazkardeşler and Serap Timur from the same institution, to Sadberk Hanım Museum Director Hülya Bilgi, to the President and directors of the Vehbi Koç Foundation for their sponsorship and to Bahattin Öztuncay.

Along with complementary visual materials, this exhibition focuses on finds from the excavations in the Üsküdar, Sirkeci and Yenikapı quarters, which had not been studied until now, as well as the Sultanahmet area. Thanks to the Marmaray Project, these priceless finds have been brought to the light of day. I sincerely hope that they will soon be displayed in the permanent museum building to be constructed in Yenikapı, where they were originally discovered.



Two examples from the graduation projects that students of Istanbul Technical University designed for the future museum to be built at Yenikapı where shipwrecks and other finds unearthed at Yenikapı excavations will be displayed.

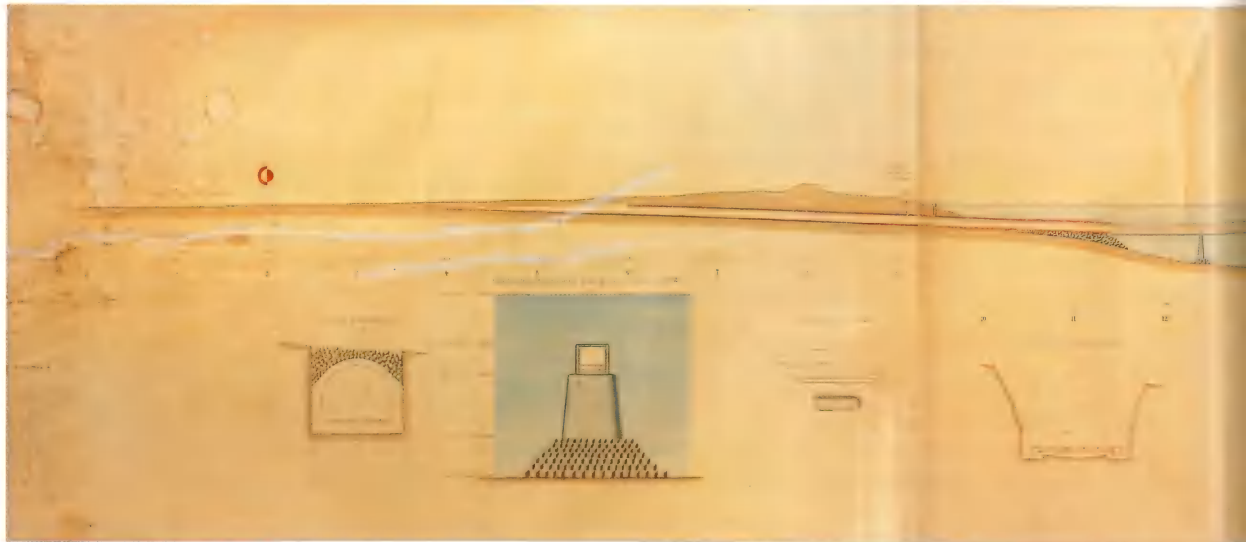


A tribute to history and culture: "Marmaray"

Haluk İbrahim Özmen*

As the largest city of Turkey and one of the largest metropolises of the world, Istanbul has been experiencing intense urbanization due to economic and social developments in recent years. Consequently, the need for transportation is increasing and continues to be a significant problem on the city's agenda. The Marmaray Project is one of the important projects initiated to resolve this growing need. Designed to traverse the city from east to west, this project is being implemented in a manner that corresponds to the historic and cultural fabric of our city. Once the project of approximately 76 kilometres part of which will pass through the Historic Peninsula, is completed, it will provide uninterrupted transportation from Gebze to Halkalı for nearly one million passengers every day. The engineering of the project has been underway since the 1980s. Archaeological excavations were initiated to preserve the historic past of Istanbul, which has been a prominent urban centre in every period of history. Upon the completion of construction, which continues concurrently with the excavations, it will become evident how a modern engineering project is successfully implemented in harmony with the historic fabric of the city.

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Introduction

Although the idea of connecting the European and Asian continents with an underwater tunnel across the Bosphorus was brought up as early as the mid-19th century, the first serious attempts based on advanced engineering technology commenced in the late 20th century. Preliminary work on the project, which would connect all the railways of Turkey without interruption and facilitate integration into the railway networks of Europe and Asia, was completed in 1984. Following research and preparation that lasted for nearly two decades, construction on the project began in 2004. Upon the completion of the project, which will carry a train from the United Kingdom to the easternmost corners of Asia via Turkey, it will become possible to revive the commercial transportation axis known to history as the Silk Road.

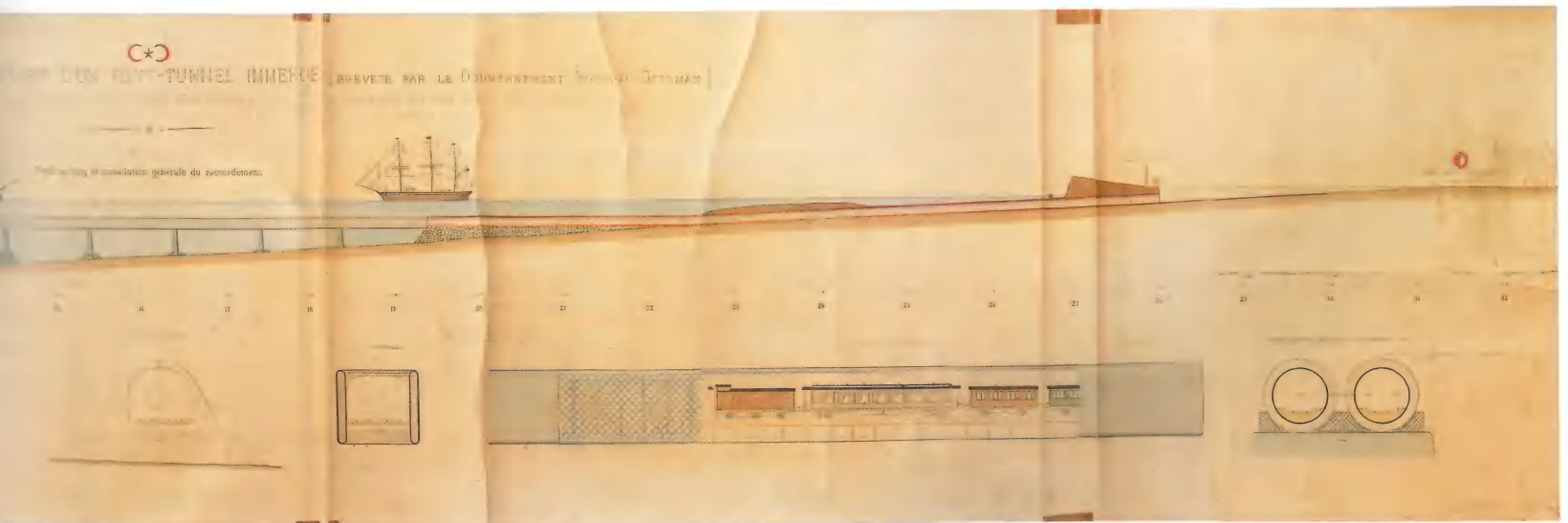
The increasing transportation needs of a global city, such as Istanbul, will be largely mitigated by providing intercity mass transportation. The implementation of the Marmaray Project has been made possible through archaeological work. During the 20-year period before construction and in the completed work as well as the work in progress, the insertion of the project, like a belt across a city filled with historical and cultural heritage, conformity to the natural fabric of Istanbul has been given first priority. When the project is completed, it will greatly ease traffic congestion on the Historic Peninsula, and, will, as projected by relevant institutions, help clear the Peninsula entirely of motorized vehicles.

History of the Project

As the capital of the Ottoman Empire, one of the largest empires in history, settlements in Istanbul expanded to both the Asian and the European coasts. Realizing the importance of connecting the two continents, Ottoman Sultan Abdülmecid commissioned a project by French engineer S. Preault in 1860.

Today advanced technological opportunities are boundless. However, the sultan's project was impossible to implement with the technology of the period. In the ensuing years, it was brought to the fore again during the reign of Sultan Abdülhamid II. This time, in 1902, German engineers F. Storm, F. T. Lindman and A. Hilliker designed an underwater tunnel, known as "*Tünel-i Bahrî*" (The Sea Tunnel) across the Bosphorus. The project entailed a horizontal platform set on 16 pylons embedded in the seabed and the construction of a tunnel by installing colossal pipes above the platform. In both projects, a line between Sarayburnu and Üsküdar was chosen as the route. A three-car train was envisaged for the project, one of which would serve as the tow-car and the other two would carry passengers. Designed with the limited engineering technologies of the early 20th century, this project was soon shelved due to financial difficulties.

1860 Bosphorus Underwater Transit Project. A project by French engineer S. Preault designed between Sarayburnu and Üsküdar.



The Marmaray Project

Goals of the Project

During the Ottoman Empire, the project was envisioned to meet the economically and socially driven transportation needs of people living on either side of the Istanbul Strait. Later, with the initiatives undertaken in the 1980s, it was further developed for the integration of the existing railway network of Turkey in Thrace and Anatolia, and by extension, to connect the Asian and European continents via Turkey by means of an uninterrupted railway system. In the globalizing world where commerce is rapidly growing in direct relation with developing economies, railway transportation is one of the cheapest ways of transport. The modernization of the railway infrastructure in Turkey will not only facilitate the growth of tourism and trade between countries, but will also help the development of friendly relationships and collaboration. In line with the changing criteria subject to the economic and social development of Turkey, the feasibility of the project was updated with initiatives undertaken in 1996. As a result of this work, the exact routes and project goals have been revised. Accordingly, it has been decided that, in addition to connecting the European and Asian railway networks across Turkey, the Marmara Project, which extends from Gebze to Halkalı, could also cater to the increasingly problematic intercity transportation of Istanbul.

Project and Routes

Although the origin of the Marmaray project dates back to the 19th century, the first serious engineering work was initiated in the early 1980s. As part of the work at that date, the Ministry of Transportation completed the following in consecutive order: a Marmara Regional Transportation Study, an Istanbul Intercity Transportation Study, an Istanbul Metro Feasibility Study and Preliminary Engineering Projects, Bosphorus Railway Tube-tunnel Transit Feasibility Studies and Preliminary Engineering Projects. In the course of these studies, it was decided to provide uninterrupted connection between the existing railways of Turkey and the international railway networks of the Asian and European continents, by extending the Bosphorus Railways Tube Transit through Istanbul from east to west. Istanbul is a city replete with historic and cultural heritage. Therefore, in the decision-making process, a route that would require minimum land acquisition –an inevitable procedure in similar large-scale projects– has been carefully chosen to affect the natural texture of the city in the least intrusive way. The project will commence at Gebze within the Kocaeli Province to the east of Istanbul on the Anatolian side and extend to Halkalı to the west of Istanbul on the European side, covering an area of 76 kilometres.

Of the 76 kilometre-long route of the Marmaray Project, 63 kilometres is surface metro lines, 2 kilometres is cut-and-cover tunnels, 9.6 kilometres is bored tunnels and 1.4 kilometres is immersed-tube tunnels. The line that extends from Gebze to Halkalı is designed as a



three-track railway between Gebze-Söğütlüçeşme and Kazlıçeşme-Halkalı, and a two-track railway between Kazlıçeşme and Söğütlüçeşme. There are 39 stations along the route. Among these, Üsküdar and Yenikapı stations are designed as cut-and-cover, the Sirkeci station is a deep station, but the remaining 36 stations are designed as surface stations.

Since it is a first in Turkey, the immersed-tube tunnel is the most intriguing aspect of the entire project. The immersed-tube tunnel is comprised of 11 tube elements that are 8.75 metres high and 15.30 metres wide. Two of these are designed as 95 metres, one as 110 metres and the other 8 as 135 metres in length. The horizontal cross-section of the tube elements is shaped as a two-bore rectangle.

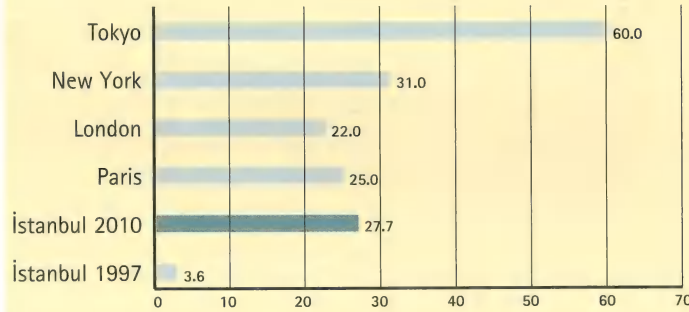
The submerged portion of the track stretches between the Üsküdar shore and Sarayburnu. The immersed tunnel is constructed as a float-in structure lowered into a pre-dredged 25 metres wide trench 20 metres deep on the sea bed.

Constructed in reinforced concrete, the tubes are covered with a steel shell that functions as a cast and provides water impermeability.

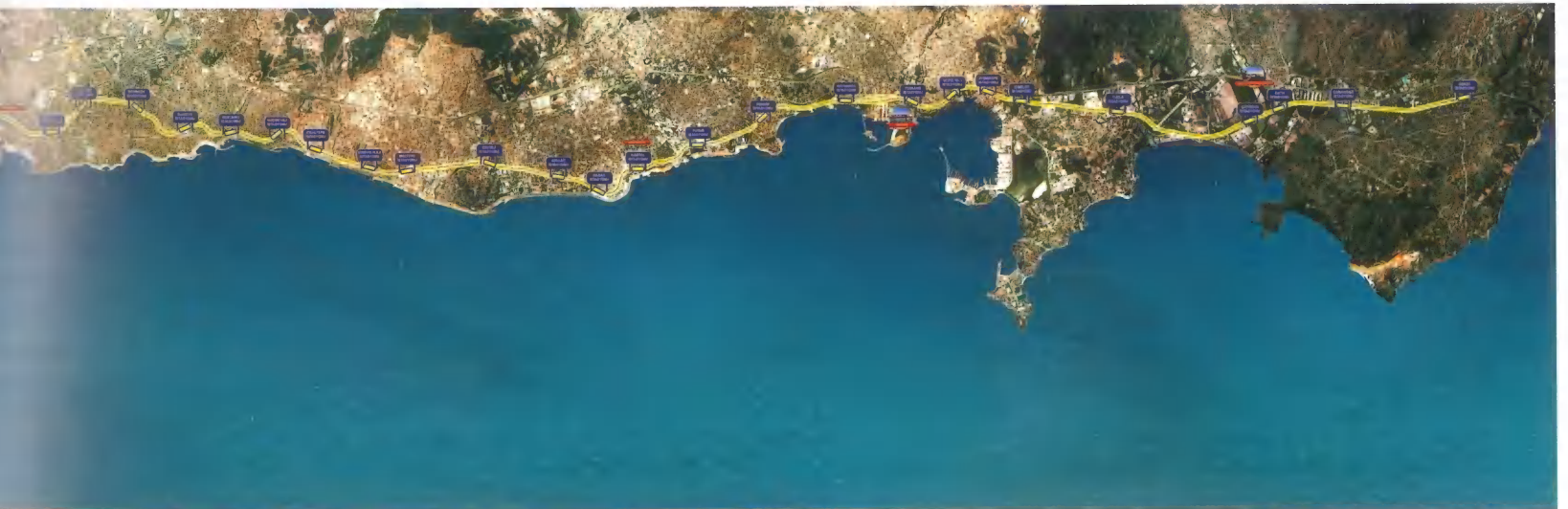
The estimated cost of this the project is 3 billion US Dollars. Due to the enormity of both its physical size and financial cost, the project is to be completed in three separate phases. These are:

- Istanbul Strait railways tube transit
- Upgrading of the commuter rail system
- Procurement of passenger and freight vehicles

Railway use in transportation (%)



Marmaray Project alignment



Since the date it was designed, integration of the other –existing or in progress–railways systems in the city have been carefully planned, and work on their integration has been completed. Due to the emphasis placed on highway development over the last 55 years, the railway systems' share of transportation has dropped to around 4%. Upon the completion of the Marmaray project and other railway systems, this ratio is projected to reach 27.7%.

Advantages of the Project

Both the natural fabric and the economic and social life of Istanbul will greatly benefit from the completed project. Expected to dramatically change the social and economic lives of people living in the city, the project's advantages can be listed as follows:

- Provide uninterrupted connection of railway systems between Asia and Europe,
- Serve as one of the main axes of inner city transportation,
- As the capacity the new commuter rail system will be 10 times higher than the capacity of one of the existing bridges, the number of vehicles in circulation will decrease considerably,
- Travel time within the city will be reduced,
- Air pollution resulting from the exhaust gases will be reduced due to fewer number of cars in circulation,
- Transportation costs per capita will be lowered,
- A comfortable and safe transportation alternative will be provided,
- Adverse effects on the historical texture will be minimized,
- A comfortable transportation alternative will be created for 1 million passengers by providing a passenger capacity of 75,000 per hour,
- Encouraging mass transportation will greatly help to save energy.

The Marmaray Project and the Historic and Cultural Heritage

As part of the studies and research initiated by the Ministry of Transportation in the early 1980s, various research projects were conducted on the historic and cultural heritage that falls within the scope of the project. Still in progress today, work on this priceless natural and cultural heritage, which is protected by law, complies with the guidelines of the "Agreement on the Protection of European Archaeological Heritage" as approved by the European Council, of which Turkey is a member.

By 2004, when the first phase of the Istanbul Strait railway tube tunnel transit project construction began, the following work had been completed:

1. Research and identification of the archaeological, historic and cultural assets along the Istanbul Strait railway tunnel route,
2. Impact assessment of the natural and cultural assets on the Gebze-Haydarpaşa and Yenikapı-Halkalı commuter rail system line,
3. Impact assessment of the natural and cultural assets that would be affected by the Istanbul Strait tube tunnel crossing.

Because the completed project will transform the economic and social life of the city, the impact that this transformation will have on the natural and cultural assets should be studied carefully, and as a whole. In this regard, in the course of the work to date, attention has been and continues to be paid to intruding as little as possible on the natural scenery and urban design of Istanbul.

Required actions are constantly undertaken to minimize the possible adverse effects on the historic urban architecture and the archaeological environment. Solutions developed in the course of this work are based on available information about the cultural and natural assets of İstanbul.

In the course of the work, it has been proposed that the direct and indirect impact of the project route and its construction techniques be studied and solutions be developed for their application. All this work has been conducted in coordination with the steering committee, which includes respective Istanbul Boards for the Preservation of Cultural Heritage as well as all other relevant institutions.

In compliance with the decisions of the Istanbul 1 and 3 Regional Boards for the Protection of Cultural and Natural Heritage, archaeological excavations were initiated under the direction and supervision of the Directorate of Istanbul Archaeological Museums in 2004 (the commencement date of construction) in Yenikapı, Sirkeci and Üsküdar, which are located on the project route as important station areas. The tunnel entrance in Kadıköy, Ayrılıkçeşme was included later after archaeological ruins were discovered here during construction digs. In the course of the past twenty years, work has been completed on 11,000 registered and unregistered historic buildings. Conducted in coordination with the Boards for the Protection of Cultural and Natural Heritage, the buildings on the Marmaray route affected by the project

have been identified, and the strategy to be followed regarding these buildings has been determined.

There are a number of original buildings with different features located on the project route. Building surveys, restitution and restoration projects have been prepared for some of these buildings. With approval and permission from the Boards for the Protection of Cultural and Natural Heritage, the buildings are being registered and some are being removed to be reconstructed. The necessary regulations for these works have been added to the contract documents of the project.

A registered, historic building located in the Marmaray Yenikapı station area has been removed, and its building surveys and restitution projects have been prepared with the implicit approval and permission of the concerned Board for the Protection of Cultural and Natural Heritage. Following the completion of the project, the building will be reconstructed in an area near its original location.

40 stations will be built on the route of the 76 kilometre-long Marmaray project. 36 of these will be built along the existing and former commuter rail system. Attempts have been made to re-furbish historic station buildings and establishments along the existing commuter line. In planning the route of the Marmaray project, historic and original station buildings, which cannot be preserved on their current sites, are to be removed. Necessary regulations have been added to the contract documents for their reconstruction in areas close to their present locations. A double-track railway passes underneath the historic Göztepe station. The preservation of this historic station building and the need to produce a technical solution that will allow a three-track railway to pass below the station building has been included in the contractual documents.

Conclusion

The Marmaray project is designed to be built in Istanbul, an old and historic city filled with valuable historic and cultural assets and ruled by diverse civilizations through history. In terms of engineering, the project is one of the most fascinating of its kind in the world. The work spread across more than twenty years has been developed to respect the historic and cultural features of Istanbul and has been revised over the years. This strategy, which was maintained during the planning, project design and construction phases, will be maintained until completion. Once the project is completed, the impact of problems in Istanbul's transportation system on the historic and cultural fabric will be minimized, and a suitable environment to sustain these values will be created. Apart from providing long-term solutions to inner city transportation, this project will also provide uninterrupted railway transportation for the east-west corridor. Consequently, the tourist appeal of this beautiful city, which has been named the Culture Capital of 2010, will be heightened.

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List of abbreviations

General abbreviations

BMK	(Marmaray Sirkeci Excavation, Eastern shaft)
CMK	(Marmaray Sirkeci Excavation, Southern Entrance)
DLH	Ministry of Transportation, General Directorate of Railways, Harbours and Airports
HMK	(Marmaray Sirkeci Excavation, Western shaft)
MRÜ	Marmaray Üsküdar
MRY	Marmaray
SC	Former Sultanahmet Prison
SMK	(Marmaray Sirkeci Excavation, Northern Entrance)
YKM	Yenikapı Metro Excavation
h	height
w	width
l	length

Coins

AE	Bronze
AR	Silver
AV	Gold
Gr	Gram
h	Clockwise mint
H	Hegira calendar
M	Gregorian calendar
Mm	Millimetre
Ref.	Reference
exergue	"under the line"

Ü

ÜSKÜDAR

The role of Chrysopolis in history as a colony city

Şehrazat Karagöz*

The issues concerning the station digs of the Marmaray project at Üsküdar Square are radically different from the problems encountered in any given ancient city excavation. The area is not merely an ancient site with defined borders, but the final stop of routes coming in from Anatolia, not to mention a city center with heavy traffic congestion (fig. 2). Due to heavy traffic junctions, such as the highways connecting to the Bosphorus Bridge and the auto routes, as well as roads connecting to the side streets of the residential areas, excavations have been and still are conducted under rather difficult conditions. To avoid any possible delay in the construction of the large-scale tube tunnel project of the state and not to complicate the daily life of the public, the prioritized areas where the excavations are to be conducted on the avenues and streets have been determined in advance. It is known that the entire public square is covered with a 0.35-0.45 centimetre-thick cement-sand-pebble-asphalt ground and that the administrations of 1954-1956 and 1980 made changes in various quarters of the city under plans to improve Istanbul's public transportation. Hence, the traces of the old street paving texture seen in engravings and the settlements marked on the Pervititch city maps were destroyed in these years. In the course of the excavations, ruins unearthed following the removal of the asphalt paving and infill, constitute the foundation walls and rubble from structures used as shops or warehouses throughout the 19th and 20th centuries. It has also been observed that the infrastructure systems such as PTT, ISKI largely damaged the areas in question.

The archaeological sites of the public square have been named with respect to the present-day buildings in the environs, thus facilitating a better understanding of the sites to be excavated (fig. 1). These areas are:

Trenches over the Marmaray Üsküdar Station: Trenches located at Şemsipaşa Mosque-Library, the other side of which is located at the Atik Valide Sultan Mosque Complex, corresponding to the two-way coastal roads, bus stops, rectangular main metro station and staircases and shafts connected to it.

Land Displacement Line (LDL/KDH): Trenches on the east end of the station, stretching from Şemsipaşa Mosque-Library to the Fountain of Ahmed III.

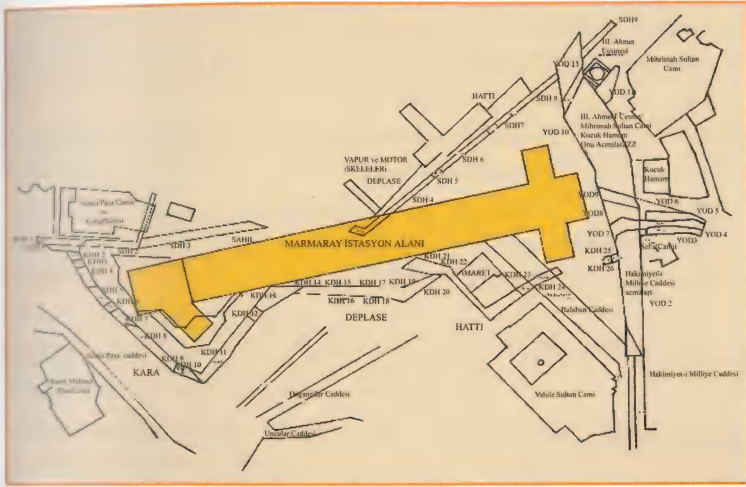
Coastal Displacement Line (CDL/SDH): Trenches on the shore side of the displacement line, extending from Şemsipaşa Mosque-Library to the Fountain of Ahmed III, Trenches at Fountain of Ahmed III-Mihrimah Sultan

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Mosque-front of Küçük Hamam, trenches on Hakimiyeti Milliye Street.

The finds discovered at the trench excavations in the aforementioned areas are dated as follows: the trenches and test pittings in the north and northwestern ends of Fountain of Ahmed III, in front of Küçük Hamam-Hakimiyeti Milliye streets and sections of CDL towards the Bosphorus generally yield finds from the earliest periods. In the remaining areas, particularly in the excavations to the south, towards the Marmara Sea, finds from the Late Ottoman and early Republican periods, such as glazed-unglazed pottery, imported porcelain and cera-

mics, various glass finds, Iznik and Kütahya tiles and ceramics, numerous candelabras, and pipe bowls, and a few Early Ottoman-Byzantine sgraffito ware sherds, have been carried from the north by currents. Archaeological rescue excavations for the cut-and-cover Marmaray Üsküdar Station conducted under the auspices of Istanbul Archaeological Museums and supervised by M. Ece Işık and Ş. Karagöz –appointed by the Museum Directorate– have not been completed as of March 2007. Although it is part of an ongoing excavation, the research and the scientific assessments presented henceforth reveal the surprisingly significant importance of Üsküdar in the Archaic period.



1

1 Üsküdar Square excavation layout plan
2 Aerial view of Üsküdar Square



2

Chrysopolis during the Archaic-Classic periods (6th-5th century BC)

Historic finds that determine the city's territories in the Archaic-Classic-Hellenistic-Roman periods had not been revealed prior to this excavation. Here, changes in the geographical and geological landscape since Antiquity constitute the most important factor. The archaeological finds discovered in Marmaray excavations verify that the present-day Üsküdar County is, indeed, the archaic city of Chrysopolis founded in the 7th-6th century B.C.

Can Chrysos be the oikist of Chrysopolis?

According to ancient sources, the city's name in Antiquity was Chrysopolis (City of Gold)¹. Although information about the etymological root of the word Chrysopolis remains vague, a mythological event combining legends and reality can be related to the founding of the city. Byzantine writer Etienne² attributes the mythological founding of the city to a traditional *ktistes* of Antiquity:

... Chrysos was the son of Chryseis and Agamemnon. Fleeing from the fury and pursuit of Aigistos and Clytemnestra, Chrysos arrives in Asia Minor. His goal was to reach

his sister Iphigenia, a priestess of Artemis in Crimea/Tauris. However, he fell ill and died upon reaching the Bithynian shores of Asia. The area has thus come to be known as Chrysopolis as Chrysos was buried here...

As this legend reveals, the shores of Üsküdar were a part of the Bithynian region. The present-day Kadıköy and Üsküdar settlements were cities of Bithynia during Antiquity. Although the story might be relating a mythological adventure, the psycho-social colonization condition of the period is replete with important historic facts. There are a number of studies available on the history of colonization and it is still not certain whether the Phoenicians or the Greeks are the first colony-founders across the entire Mediterranean basin. Furthermore, the ancient city sites in the Mediterranean are either not excavated or the digs to date have not been completed. It is important to note here that first and foremost, the *oikist*, the leader of immigrants or colonists, always had to be a member of an aristocratic family. The identities of the *oikists* are included in ancient literature only as mythological heroes, such as Byzas, the eponymous founder of Byzantium. With this in mind, could there be truth to the view that Chrysos was the *oikist* who founded Chrysopolis?



3. Ceramics from the Archaic Period: Pitcher, short lekythos, olpe fragment (6th-5th century BC)

¹ RE Paulys, Neue Bearbeitung 3, 2618, *Realencyclopädie der Classischen Alterums wissenschaft*, 1899.

² C. Texier, *Küçük Asya Coğrafyası, Tarihi ve Arkeolojisi*, v. I, trans. A. Suat, Ankara 2002, p. 126.

Overall, it is assumed that the period of colonization took place in the Aegean world after the Dark Age of 1200 to 800 BC. According to the tradition of this period, the oracle of the priest of the Temple of Apollo would be consulted and the lands in which to settle would be sought with his guidance. There were various reasons for establishing a colony: depletion of sources due to an increase in population, searching for fertile lands, discovering a suitable geographical harbour, and trade were among these. Establishing a replica of the "old country" in the new colony was a prerequisite. As expeditions were made to unknown territories, men young enough to fight were drafted. In his writings, Hesiod, another renowned poet of Antiquity after Homer, fluently conveys the socioeconomic conditions of the period and the migrations conducted to make a profit in the new territories. This condition is similar to the state of the workers leaving for foreign countries to find work today:

"He once left Aeolian Kyme and on his black ship
Came to this place, after a long bout with the sea,
And he was not fleeing from great riches and comforts,
But from the grim poverty that Zeus gives to man."³

Finds

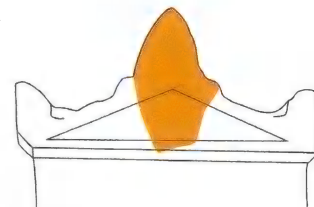
Dated to 550-540 BC, pottery examples from the excavation reveal typical forms and character of the period and testify to migrations from Western Anatolia. The *oinochos* with a light-pink fabric and corrugated ornate ring on its shoulder (MRÜ.06/510) (catalogue no. Ü1), *kylixes*, the interior and exterior of which are painted with concentric bands and circles (MRÜ.06/509 and 573) (catalogue no. Ü2, Ü4), a *hydria* sherd (MRÜ.06/571) (catalogue no. Ü3), a ceramic sherd with a meander motif, an *olpe* sherd, a jug with a single handle, a short *lekythos* (fig. 3), and comparable pottery sherds reflect the ancient cities of the Aegean and the presence of a settlement in the area corresponding to the period of colonization. Apart from the pottery of Archaic Ionia, additional finds, such as a central acroteria from an Ionic marble stele (catalogue no. Ü5; fig. 4), a hip fragment from possibly a kouros (fig. 5) and terracotta grave bricks, must belong to the necropolis of the colony city, which was founded by settlers in the 6th century BC from Ionia in Western Anatolia. A reconstruction drawn after careful study of the kouros hip fragment, typical of sculpture of the period, indicates that the fragment may have been a part

of a sculpture 1.68-1.70 metres tall and possibly similar to a Tenea Kouros⁴.

This necropolis must have been located on the descending slopes behind the ancient acropolis on its hill, which was higher in Antiquity than at present (current altitude 90-80 metre), north of the Bosphorus and currently known as Sultantepe Mevkii. All the early remains from this area have been discovered at the skirt of the high hill, which would have been the acropolis to the north of the bay in the 7th-6th centuries BC. Nonetheless, a study of the central acroterium clearly shows that the find is part of an Ionic graveyard stele, which generally had high and profiled acroteria, and that the flat graveyard brick comes from a necropolis, similar examples of which are found in Western Anatolia.

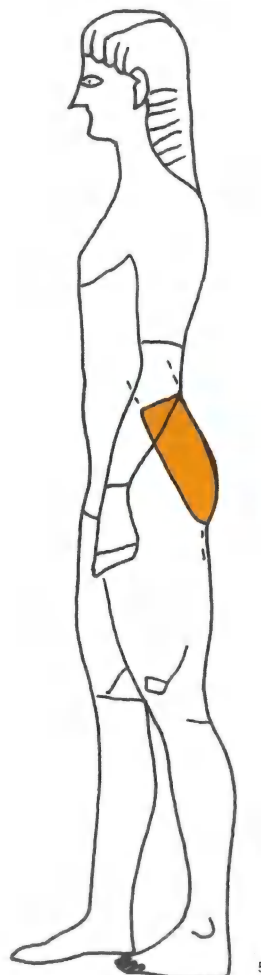
Persians-Atticans – the ten thousands at Chrysopolis

During Antiquity, two distinct historic events regarding the name of the region are attributed to eastern Persians, who invaded Asia Minor in 547-546 BC and ended the rule of the Lydian Empire. In 513 BC, on his way to a Scythi-



4. Acroterium fragment

5. Hip fragment, possibly from a sculpture similar to the Tenea Kouros



³ Hesiod: *Theogony, Works and Days, Shield* translated by Apostolos N. Athanassakis, The Johns Hopkins University Press, 1983, p. 83, lines: 635-638.

⁴ J. D. Beazley, *Greek Sculpture and Painting*, Cambridge 1966, fig. 29.

an expedition, the great King Darius of Persia⁵ crossed the Bosphorus on a pontoon bridge he had built from a series of rowboats. Among the Asian lands under his dominion was the city of Chrysopolis. Since the Persians deposited the gold they collected as booty/tax here, the city came to be known as Chrysopolis, or "the City of Gold"⁶. In the *Hellenica* (1.3.12) of historian-writer Xenophon of Athens (430-355 BC) the oath ceremony between the commanders of the two cities is described as follows:

"After this, oaths were exchanged between them by proxy. Alcibiades took them at Chrysopolis in the presence of two representatives sent by Pharnabazus -namely Mitrobates and Arnapes. Pharnabazus took them at Chalcedon in the presence of Euryptolemus and Diotimus, who represented Alcibiades. Both parties bound themselves not only by the general oath, but also interchanged personal pledges of good faith."

In this scene, the political relationship between the Persian commander-satrap and the commander of Athens is evident. The excavations also yielded the typically Attican, mock-metal ceramic bowls of Chrysopolis from the 5th-century BC, with black glaze and sharp contours.

Athenian commanders and their entourages must have brought vessels such as the Attica-style pottery lamp (MRÜ.06/565; catalogue no. Ü6), *skyphos* fragments (fig. 6; MRÜ.06/572, 569, 580) a bowl (MRÜ.06/570), and a *kylix* fragment on their journey to Chalcedon and Chrysopolis. The interior of the black-glazed *skyphoi* are decorated with palmette designs interlaced with connected branches; similar examples of these vessels have been discovered in the excavations at the Athens Agora. In another section of *Hellenica* (1.1.22), the author speaks of the presence of a fleet of thirty ships guarding the walls and the port tax office of the city:

"... Continuing the voyage, the squadron reached Chrysopolis in Chalcedonia where they built a fort, and established a custom-house to collect the tithe dues which they levied on all merchantmen passing through the Straits from the Black Sea. Besides this, a detachment of thirty ships was left there under the two generals Theramenes and Eubulus, with instructions not only to keep a look-out on the port itself and on all traders passing through the channel, but to generally injure the enemy in any way which may present itself. This done, the rest of the generals hastened back to the Hellespont."



6. Skyphos fragments, Classical Period, 5th century BC

⁵ H. Merle, *Geschichte der Städte Byzantion und Kalchedon*, Kiel 1916, p. 11.

⁶ C. Texier, *Küçük Asya Coğrafyası, Tarihi ve Arkeolojisi*, v. I, trans. A. Suat, Istanbul 2002, p. 126.

This historical data points to the presence of an important port city, which functioned as a customs center in Chrysopolis, on the Asian shore of the Bosphorus. It is evident that by the end of the 5th century BC, Athens maintained control over the water courses at the most important junction of the Bosphorus⁷. The harbour at Chrysopolis, could apparently accommodate 30 ships in its bay, which was evidently quite different from the present-day geography of the area.

Xenophon's (430-355 BC) most famous work *Anabasis* is also a very important document in this sense. This historic work narrates the adventurous expedition of a large, multi-ethnic army –including non-Greek mercenaries– that took off from Sardis, the capital of the Lydian Empire in Western Anatolia and landed in Cunaxa in Southern Mesopotamia, their victory following a war against the Persians, and the safe return of the surviving soldiers to their homeland. In a section of *Anabasis* (6.VI.38), "...And on the sixth day [they] reached Chrysopolis in Chalcedonia. Here they halted seven days while they disposed of their booty by sale" refers to the years 410-405 BC of the adventurers' return. However, as the Marmaray excavations in the area are confined to the station and the water lines that will be displaced, no traces of Persian gold booty, nor trophies the Ten Thousand brought to Chrysopolis from the East have been found. Still, one cannot expect to discover such finds at the excavated areas, which were part of a deep bay in the 5th century BC and were later silted and filled in. The objects that the Ten Thousand brought and sold here were the *toreutics* (engraved vessels made of precious metals) that Anatolian mining workshops working under Persian domination produced. As so often in history, it is quite possible that metal vessels of this kind were later melted –out of need– to be used in the production of other objects.

Excavation finds confirm that Chrysopolis, the founding of which coincides with the other Ionian colony at Chalcedon during the period of colonization in the 6th century BC, was an important port city during the Classical Period. Interestingly, Herodotus of Halicarnassus, who lived between 484 and 420 BC, does not mention Chrysopolis in his *Historia*, an account of the period in which he lived⁸.

The Archaic and Classical period earthenware, the presence of which were previously unknown in Üsküdar, was discovered inside the 5 x 5 metre pitting trenches, at a depth of 8 metres inside a mud layer –unlike soil– mixed with the sea and wastewater. The mud infill was removed

in bulks and its study was completed only after kneading it by hand. While they are known in Western Anatolia, this Archaic-Period earthenware is encountered for the first time in the Üsküdar area. Although excavations have not yet been completed, the finds offer preliminary information on the Archaic Period of ancient Chrysopolis. Previously, the provenance of these wares was recognized only as ancient cities of the Aegean. However, Eastern Greek earthenware studies in recent years have shown that there are additional, new centers, particularly towards the north. With the exception of a few known Western Anatolian cities, the presence of new and different centers is confirmed by the earthenware discovered in ancient city-sites across the entire Mediterranean and even in the Black Sea region⁹. Thus, the archaic earthenware of Chrysopolis also contributes to these new discoveries.

By analogy, the archaic earthenware of Chrysopolis points to a city-colony connection, possibly between Clazomenae (Urla) and the metropolis¹⁰. Furthermore, the amphora fragments discovered in the excavations show a striking resemblance in terms of character to the Clazomenae amphorae of 650-620 BC, which have thick, elongated necks, cane-handles, and are decorated with painted bands at the body, mouth and shoulders, and with horizontal "S" designs on the shoulder¹¹. With the socioeconomic conditions of the Colonization Period in mind, it is possible that a certain number of the amphorae found in the Chrysopolis excavations were the possessions of the founding colonists, who settled in the area. When the selection of artifacts for the exhibition was completed, Greek pottery sherds and *oinochoe* fragments with horizontal "S" designs on the shoulders, similar to the early Clazomenae amphora motifs¹² were identified. Considering that the amphorae are dated to 630-620 BC, it now seems that Chrysopolis was founded by different colonists, who arrived in the area before the Megarans founded Chalcedon. In recent years, studies of vessels produced at south Ionian workshops in Western Anatolia during the Archaic Period, as well as the forms, development, typology, workshop features, and distribution of these vessels have come to the fore¹³. New excavations reveal that the vessels, which were known to have been manufactured solely in a few cities in Western Anatolia, did in fact spread all the way to the Black Sea and that there were local production workshops in these areas. Based on the evaluation of the finds from the Archaic Period, the presence of a similar local workshop in the ancient city of Chrysopolis also becomes a possibility.

⁷ H. Merle, *Geschichte der Städte Byzantion und Kalchedon*, Kiel 1916, p. 27.

⁸ *Herodot Tarihi*, trans. Müntekim Ökmen, Greek comparison: A. Erhat, Istanbul 1983.

⁹ R. Posementir, – S. Solovyov, "Zur Herkunftsbestimmung archaisch-ostgriechischer Keramik: die Funde aus Berezan in der Eremitage von St. Petersburg", *IstMitt*, issue 26, p. 103.

¹⁰ Y. Ersoy, *Clazomenae: The Archaic Settlement*, (Ph. D. Diss. Bryn Mawr College 1991), New Jersey 1996, pl. 79, pl. 114; R. Posementir, – S. Solovyov, "Zur Herkunftsbestimmung archaisch-ostgriechischer Keramik: die Funde aus Berezan in der Eremitage von St. Petersburg", *IstMitt*, issue 26, p. 103, Abb. 18, Abb. 34.

¹¹ Y. Sezgin, "Clazomenian Transport Amphorae of the Seventh and Sixth Centuries", Symposium Klazomenai, Teos and Abdera: Metropoleis and Colony, Proceedings of the International Symposium held at the Archaeological Museum of Abdera, 20-21 October 2001, Salonica 2004, p. 170, figs. 1-5.

¹² Y. Ersoy, *Clazomenae: The Archaic Settlement*, (Ph. D. Diss. Bryn Mawr College 1991), New Jersey 1996, pl. 128, pl. 171.

¹³ *Ibid.*, pl. 115; M. Kerschner, "Zur Herkunftsbestimmung archaischer ostgriechischer Keramik: die Funde aus Berezan im Akademischen Kunstmuseum der Universität Bonn u. Robertinum der Universität Halle-Wittenberg", *IstMitt*, issue 56, pp. 129-156, Tübingen 2006, p. 156; U. Schlotzhauer, "Die Südionischen Knickrandschalen: Formen u. Entwicklung der sog. Ionischen Schalen in archaischer Zeit", Atken d. Symposions-Die Aegaeis u. d. wesi. Mittelmeer-ÖAW ArchForsch 4, Vienna 24.03.1999, pp. 407-416, Vienna 2000, pp. 407-416.

Chrysopolis during Hellenistic and Roman Periods (4 BC – 4 AD)

Hellenistic period

Finds from the Hellenistic Period suggest the presence of a small Hellenistic settlement at Chrysopolis, founded as a result of Alexander the Great's expeditions to the East. It is significant that the "West Slope Earthenware" with black glaze found in a number of ancient cities of Western Anatolia during the Hellenistic Period was also discovered in this area. The *kantharos* dated to the early 4th century BC (MRÜ.06/505; catalogue no. Ü7), a bowl with grooved ornamentation - a prototype of Megaran bowls (MRÜ.06/523; catalogue no. Ü8) and the *pinax* sherd feature the characteristics of the early Hellenistic Period.

When the Hellenes arrived in Chalcedon during their campaign to the East as part of their Hellenistic ideology, Chrysopolis was a city that maintained its significance in the Classical Age and the unsilted part of the harbour was still at an advanced stage in Bithynia. Only few and partly finished Ionic capitals from the Hellenistic period have been discovered as evidence of settlement architecture. However, the lack of extensive research, not only in Üsküdar, but in the entire area, confines our knowledge of the Hellenistic period to ceramics. The

imitation-metal bowl (MRÜ.06/568; catalogue no. Ü9), black-glazed base sherd with palmette motifs at its center, small bowls, and kitchenware are among the finds from the post Early-Hellenistic Period. The stylistic study of the amphora fragments yield the typology of Chios, Sinope, Knidos, Rhodes, Thasos, North Africa and north Aegean, which emphasizes the busy commercial role of this area during the Hellenistic period.

Roman period

Until recently, the location of Üsküdar in Antiquity has been based on a few ancient sources. There are different studies and views on the etymological root of the name Üsküdar,¹⁴ none of which is certain. Among the different theses about the name, one poses that arriving in Istanbul in 1203 with the Crusaders, Geoffroi de Villehardouin called this area Escutaire. Another view is that during the Roman era, there was a Roman barracks here accommodating soldiers who carried a leather shield or escutcheon, known as *Scuti* and that the name Scutarii was derived, centuries later, from the name given to this shield.¹⁵

In his *Geographika* (XII. IV. 2), historian and geographer Strabon of Amaseia (Amasya) notes that in the post archaic, late Classical-early Hellenistic-early Roman



7. Byzantine bowls, 13th century

¹⁴ S. Eyice, "İstanbul'un bazı semt ve mahalle adları hakkında bir deneme", *Türkiyat Mecmuası*, issue XIV, İstanbul 1965, pp. 208-209.

¹⁵ S. Eyice, *Bizans Devrinde Boğaziçi*, İstanbul 1976, p. 49 and footnote 106; E. Karakaya, "Üsküdar'ın Bizans Devri Arkeolojisi", İstanbul, issue 46, İstanbul 2003, p. 74 and footnote 4.

periods, the city was referred to as Chrysopolis. In Strabon's (1st century BC) reference to the borders of the Bithynia region and the neighboring countries, it is evident that Chrysopolis was a simple *kome*. He writes,

"In this last country, at the mouth of Pontos, there stands Chalcedon, founded by the Megarans, the village of Chrysopolis and the Temple of the Chalcedonians...in Bithynia in the 1st century..."

It seems that the city was divested of its earlier city walls in the Hellenistic Period. The Asian shores of the Bithynia region are described as, "...*Chalcedon, founded by the Megarans, the village of Chrysopolis and the Temple of the Chalcedonians*". It is evident that, during the Roman Period – particularly in the 1st century BC – in which the late Hellenistic culture was still alive, the city continued to be known as Chrysopolis. Strabon's reference to Chrysopolis as a village leads us to conclude that in the Pre-Roman Period, this strategic waterway of the Bosphorus had lost its significance as a city at the end of the 1st century BC. However, the large number of ceramics, pottery lamps (MRÜ.06/552; catalogue no. Ü10), and glass objects such as a bracelet, a beaker and a small bottle (fig. 8, small bottle on left), an interesting terracot-

ta fish pan and countless pottery sherds, as well as marble sculpture and stele fragments present a far different view than the simple village that Strabon mentions.

At -1.50 metres below sea level, between sand and pebble infill of the former Çavuş Creek (which is a street today), a graveyard stele has been discovered during a foundation dig (MRÜ.06/448; catalogue no. Ü12). While the architecture of the stele is nondescript, in the course of the excavation, it was thought that the woman seated on the left was shaking hands with the small figure facing her. However, it later became clear that the small figure was a servant extending a jewelry box to the lady. This is a typical and highly popular scene in graveyard art during the Roman Period. A marble Kybele fragment (MRÜ.06/474) (catalogue no. Ü11) discovered at -2.90 metres during a test pitting is also an interesting find. This statuette of Kybele has an inscribed pedestal; the upper section of the sculpture is broken. Kybele is clad in a chiton and himation, and holds a lion – her attribute on her lap. The pedestal and the statuette are carved out of monolithic marble; the pedestal carries an inscription of 9 lines. Since the lower section of the pedestal is broken, the entire inscription could not be deciphered. However, the legible part reveals that overall, fishing was an important source of income, that during



8

8. Small, glass bottle from the Roman Period and Byzantine bracelet

the time of king/god Poseidon, Quintos Lollios Katus (possibly a fishing boat captain) had begged him to protect the fishery (or the fishing nets). The inscription also includes the names of a devoted servant (Philodespotes) Lollios and their fathers, as well as those of seafarers. The most intriguing point in this work is that the statuette of the mother goddess of Asia Minor is coupled with the Doric name of Poseidon, the god of the seas from Olympus. Although there is no mention of Kybele in the inscription, her personification as the goddess of fertility and abundance is identified with the name of Poseidon. The Chrysopolis Kybele is an interesting artifact, for these god and goddess names were never invoked side by side in Antiquity, but they are together here, one in personification and the other in name. This is truly a syncretism. Poseidon's name in the Doric dialect is encountered on Corinth *pinakes* in the second half of 6th century BC.¹⁶ Ancient sources mention the presence of a Temple of Poseidon on the northern shores of the Asian side of the Bosphorus¹⁷. Furthermore, the high number of amphorae fragments originating from various cities indicates that the area had busy commercial activity during the Roman Period, as well.

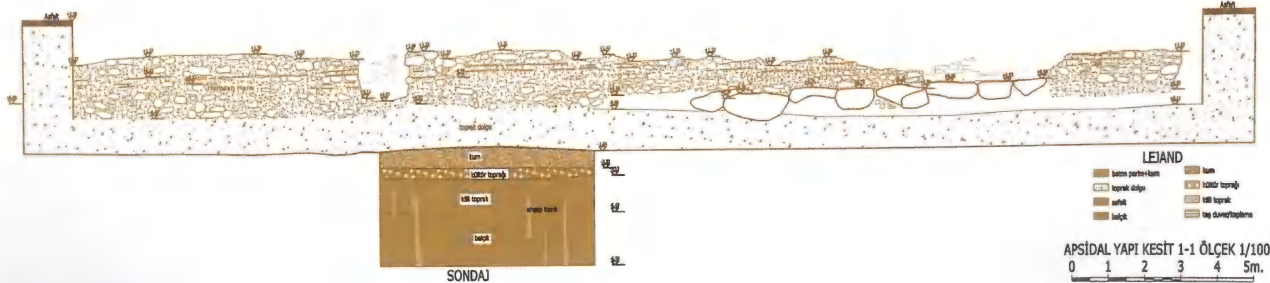
An example of this tradition of faith is the Kybele statuette found in the Pergamon-Kestel excavation. Discovered in a Roman pottery workshop, the seated Kybele is depicted in the same typology, with a lion on her lap¹⁸. As the deification of the Earth Mother, she assumes her place in the workshop of a potter to bring abundance and fertility, a belief that has not changed over centuries. These iconographic Kybele statuettes have also been unearthed in Eskişehir, Kyme, Ephesus, Miletus, Gordion, and Torbali.

Scutarii (Üsküdar) during the Byzantine period

In his memoirs¹⁹, G. de Villehardouin, who participated in the Fourth Crusade, notes that the Skutarion Palace was located on the shore and across from Istanbul, in an area where the Crusaders could easily land their boats. De Villehardouin's memoirs constitute the best-known and familiar source on how the area's name was transformed over time, changing from Escutaire referred to by Crusaders who arrived here in 1203. Here it is also noted that the original name of the area was transformed into Eşküdär during Turkish rule, a word that means "harbinger" in Persian²⁰. Information relating to the Byzantine Period of Üsküdar and its environs is limited at best. However, it can be said that Chrysopolis came to be recognized as Skoutarion in the 12th century. Our earlier knowledge of this period is derived from finds discovered by chance during foundation or infrastructure construction – because there were no systematic excavations – and from historic sources. For instance, this observation defines Üsküdar as a small town affiliated with Kadıköy:

"Chrysopolis was merely an advanced suburb of Chalcedon (Kadıköy) and never carried the same weight as modern Üsküdar. Under the Byzantines, the area was regarded as an insignificant, simple provincial town of the Asian shore. It is not until the Ottoman Period that the area attained a certain size and significance"²¹,

All publications about Üsküdar offer the clichéd information that the area was the beginning and end of caravan routes extending into Anatolia, as well as the intersection of military and trade routes. Despite the absence of any original remains from the Byzantine Period and a



¹⁶ LIMC VII. 1: pp. 105, 114-117.

¹⁷ RE III. 1: 114718 Ş. Karagöz, "Die Statue von Kybele aus Kestel bei Pergamon", *İstMitt.* issue 14, p. 350., Abb.1- 4a.b., Tübingen 2004.

¹⁸ Ş. Karagöz, "Die Statue von Kybele aus Kestel bei Pergamon", *İstMitt.* issue 14, p. 350, Abb.1- 4a.b., Tübingen 2004.

¹⁹ G. de Villehardouin, *La Conquête de Constantinople*, Paris 1880-1870, Paris 1938, p. 136.

²⁰ S. Eyice, "İstanbul'un bazı semt ve mahalle adları hakkında bir deneme", *Türkiyat Mecmuası*, issue XIV, İstanbul 1965, pp. 208-209; E. Karakaya, "Üsküdar'ın Bizans Devri Arkeolojisi", İstanbul, issue 46, İstanbul 2003, p. 74.

²¹ R. Janin, "La Banlieue Asiatique De Constantinople", *Echos d'Orient*, issue XXI, Paris 1992, p. 338.

lack of finds during the Marmaray excavations, an important structural remain from a distinct historic period has been unearthed. The foundation remains we termed as "Apsidal Structure" unearthed in the trenches in front of the Mihrimah Sultan Mosque-Küçük Hamam (figs. 9, 10), as well as small finds discovered in the infill dirt and the dispersed, non-*in situ* architectural fragments indicate that there were settlements in the area as of the Early Byzantine Period. However, to determine the exact territory, excavations need to be completed. Although our knowledge is based on an incomplete excavation, it parallels the historic information available on Üsküdar for the first time. The portion of the aforementioned structure's entrance/gate remains outside of the displacement area

line and its extension is still located on Hakimiyeti Milliye, a busy street. Therefore, since the entrance of this Byzantine architectural structure has not yet been excavated, it has not yet been identified in the grid squares.

The foundation walls of the structural remains feature characteristics of Byzantine architecture. The plan and the retaining walls of the structure are covered with foundation remains of buildings built up until recent times. However, the ancient ruins unearthed from beneath the urban texture foundation recently removed, would certainly shed new light on the history of Üsküdar. The "hidden brick" wall construction technique of later periods indicates that the apsidal structure was built in the 12th-13th centuries²². First, coarse, large stone blocs are

²² Ş. Karagöz, "Marmaray Projesi Üsküdar Meydanı aç-kapa istasyonu arkeolojik kurtarma kazıları", *15th Museum Studies and Rescue Excavations Symposium*, 24-26 April, Alanya, fig. 12.



9-10. Apsidal structure cross-section and test pitting

placed on the flat ground. Then, these blocs are covered with four rows of thin brick plates. However, the reason why the mortar between the bricks seems wide is the presence of a second brick in between. This additional brick is pushed into the plaster and disguised from view and the wall is constructed with the "hidden brick" technique, giving it additional strength. This Late Byzantine-Early Ottoman wall construction technique was comprised of stone, brick and mortar²³.

In the course of the excavations to discover the interior flooring of the church, *in situ* architectural stones have not been encountered. Finds do include considerable broken marble fragments, studies of which will be completed once the entire excavation of the structure is finished. However, the 80 skeletons (fig. 11) discovered inside and around the structure date to the period prior to the apsidal structure. It is evident that a small necropolis was present here before the construction of the structure²⁴. The skeletons are side by side, placed in upper and lower rows²⁵. Surrounding skeletons are at the

same ground level and at times found buried under the wall. In the preliminary studies, the gender of these skeletons has been determined from the manner in which they are interred. The hands of the men are clasped on the abdomen, whereas the hands of women are placed crosswise on the bosom. Oyster shells (fig. 12; MRÜ.06/518, 519) have been discovered with only one skeleton inside the apsidal structure and two skeletons outside of it. Initially regarded as objects within the dirt infill, following a thorough examination, it has been observed that the oyster shells contain neat holes at the base rims. These oyster shells were possibly suspended around the neck on a simple thread. In terms of faith, the oyster shell is associated with Aphrodite, goddess of beauty and love, born out of an oyster shell. During the Roman Empire, priestesses of the Temple of Artemis wore oyster shells around their necks as the attribute of the mother goddess of the city. Discovered as a burial gift, the oyster is a symbol of faith that denotes eternity and reincarnation.

11. Skeletons around the apsidal structure

12. Sea shells

13. [opposite page] Bronze censer and reliquaries, Byzantine period, 11th-12th century



11



12

²³ İ. Tunay, "Geç Bizans-Erken Osmanlı Duvar Teknikleri", 8th Turkish History Congress, v. III, p. 1692, Ankara 1983.

²⁴ In compliance with the approval of the General Directorate of Cultural Heritage and Museums, the skeletons have been sent to Ankara University, Faculty of Language, History and Geography, Department of Anthropology-Enver Bostancı and Refakat Ciner Laboratory for study.

²⁵ Karagöz, *ibid*, fig.11

Dating of the monastery building

In the limited research on ancient days in Üsküdar, the descriptions of Saint Philippikos and Hagia Marina monasteries and their territories are not entirely clear²⁶. Janin states that this religious complex known as Chrysopolis and Philippikos Monastery is one and the same²⁷. According to historian Kedneros in the 6th century, a church was built here in 595 by Emperor Mavrikios's (582-602) sister, Gordia's husband, in honor of the Virgin Mary²⁸. Philippikos had a lovely palace or villa here with a lush, beautiful garden, neighboring the monastery. When Mavrikios was executed, Philippikos was incarcerated in his own monastery and was buried here upon his death shortly later in 610. From this information, we conclude that there was an imperial monastery in this area and that it was considered an important religious center. In one of his writings, Patriarch Nikephoros (806-815) describes the beauty of this monastery. The name of this monastery is not found in Byzantine sources after the 10th century. It is not certain in which part of Üsküdar this large monastery was built.

From various autobiographical sources²⁹, we learn that after being excommunicated by the Patriarchy, Simeon Theologos was obliged to leave the peninsula (Constantinople) and that he subsequently arrived in Üsküdar, where he discovered and renovated a dilapidated monastery³⁰. The same sources also mention the presence of the Hagia Marina monastery in this area, although the exact location of it is unknown. There is no other information available on this establishment – which left no trace in history – except that it was founded at the base of a hill, near a swamp. It can be argued that the Salonica graveyard property was the location of this monastery. Considering that the name of the only large religious establishment was erased from history in the 10th century, and that the other similar establishments were short-lived monasteries that followed one another until the 14th century, it is also possible that the same area survived, although diminished in size and with its name was changed over time.

Based on historical data, it is strongly possible that the apsidal structure with a single nave unearthed during the Marmaray Üsküdar rescue digs, in fact, was part of the Hagia Marina Monastery at the base of a hill. As the Bül-bül and Çavuş creeks silted in the deep bay in the 9th and 10th centuries, the view that the structure remained only in name as one of the coastal monasteries along the Bosphorus is probably correct. The only parallel example of this

structure – possibly the Trapeza (Refectory) – on the Historic Peninsula appears to be the Kefeli Masjid on the slopes of the Golden Horn³¹. It must be a part of the sprawling Hagia Marina Monastery complex from the Byzantine period. Among similar examples in ancient cities are the single-naved structure/monastery buildings unearthed during the Chersonesos excavations in Crimea³². On the other hand, the scattered marble finds discovered in a large area on the site or within the wall structure denote the presence of a Byzantine monastery or church from the 5th-6th centuries. The composite, carved, Ionic, Corinthian and cubic capitals, as well as columns and column fragments are dated to the 5th-6th century. It is known that the ostentatious buildings constructed during the reign of Justinian I were not built after the 6th century and that fragments of earlier buildings destroyed by earthquakes, invasion or for various other reasons, were used in the construction of 11th-12th century buildings.

The test pittings conducted particularly inside the apsidal structure and its surrounding areas reveal that the northern end of the area was already beginning to be



²⁶ S. Eyice, *Bizans Devrinde Boğaziçi*, İstanbul 1976, p. 51; E. Karakaya, "Üsküdar'ın Bizans Devri Arkeolojisi", *İstanbul*, issue 46, İstanbul 2003, p. 74.

²⁷ R. Janin, "La Banlieue Asiatique De Constantinople", *Echos d'Orient*, issue XXI, Paris 1992, p. 349.

²⁸ R. Janin, "L'Église Byzantine Sur Les Rives Du Bosphore (Côté Asiatique)", *Revue Des Etudes Byzantines*, issue XII, pp. 92-96, Paris 1954.

²⁹ RME 1967, p. 537.

³⁰ *Orthodoxia* 1957, p. 7.

³¹ P. Grossmann, "Beobachtungen an der Kefeli-Mescid in Istanbul", *İstMitt* 16, İstanbul 1966, p. 241; S. Eyice, "İstanbul'da XVIII. yüzyılda mescide dönüştürülen son Bizans kiliseleri", *17. Yüzyıl Osmanlı Kültür ve Sanatı-19-20 March Symposium Proceedings*, 1998, p. 108.

³² *Crimean Chersonesos: City, Chora, Museum and Environs*, National Preserve of Tauric Chersonesos, Institute of Classic Archaeology, Texas 2003, pp. 102, 105, 111.



silted in by the 5th-6th century BC by alluvial deposits from Bülbul Creek. Late Roman ceramics (African slab ware)³³ as well as pottery³⁴ and lamps³⁵ extending from Early Byzantium to later periods have also been discovered here. The large number of Ottoman and Byzantine pottery sherds excavated from the apsidal structure and the dirt infill around it are useful in determining the date of the structure. The majority of the finds is comprised of unglazed amphora fragments with stamped handles, used between the 10th and 13th centuries³⁶. It is known that, with the exception of a few systematic excavations, Byzantine ceramics are not given too much credit in archaeological digs. The overall position is summarized in one of the recent studies on glazed Byzantine ceramics of Anatolia³⁷. A graveyard stele with a marble inscription plate discovered among the finds indicates that a man named Petrus is "buried here." The pottery lamps and the fragments from a basin used to bake bread³⁸, pottery lamps, the lobe handles of which are ornate in the shape of Helios's head (fig. 14), Byzantine-period pottery lamps (MRÜ.06/632, MRÜ.06/458, MRÜ.06/462; catalogue no. Ü13, Ü14, Ü15) and rims of a sacred bread-baking vessel with an incised inscription as well as pottery (MRÜ.06/371, 423, 440; catalogue no.

Ü16, Ü17, Ü18) and unguentarium fragments (fig. 15) are important finds of the Byzantine Period, between the 5th and 13th centuries. Tens of Byzantine coins from the same period are also of significance. The bronze censer (MRÜ.06/380; catalogue no. Ü19) as well as the three cross-shaped pendant reliquaries (fig. 13; MRÜ 06/380, 381, 382, 383; catalogue no. Ü19, Ü20) are finds unique to this area and reflect the Byzantine era of Üsküdar (fig. 13 bronze finds; MRÜ.06/381) (cat. no. Ü20). One of these was discovered as a burial gift alongside skeleton number 3. It is possibly the property of a prominent religious leader of the church. Parallel examples are encountered across Anatolia and on the Historic Peninsula³⁹.

It is possible that Chalcedon was demolished in the 4th century when the East Mediterranean basin was completely destroyed. This period must have been important for Chrysopolis due to its proximity to Chalcedon. As in Anatolia, the earlier architectural structures from the Roman Period must have been destroyed during this time. It is evident that due to the frequent occurrence of earthquakes⁴⁰ between the 5th and 12th centuries and the pillages, particularly instigated by foreign invasions (Sassanid and Arab conquests in the 7th century) a portion, if not the entirety, of the harbour was

14 . [opposite page]
Byzantine pottery lamps,
5th-6th century AD
15. Unguentaria, 5th-6th
century



15

³³ J. W. Hayes, *Late Roman Pottery*, Rome 1972, p. 246.

³⁴ J. W. Hayes, *Excavations at Saraçhane in Istanbul*, v. 1-2, Princeton 1992, pl. 1-11.

³⁵ *Ibid*, pl 18-25.

³⁶ *Ibid*, pl. 12-15.

³⁷ E. Parman, "The Pottery from St. John's Basilica at Ephesos", *Recherches sur la céramique byzantine*, İstanbul 1999, pp. 277-289; B. Böhlendorf-Arslan *Glasierte Byzantinische Keramik aus der Türkei*, İstanbul 2004.

³⁸ Karagöz, 2006, fig. 13.

³⁹ Harrison 1986: Nr. 634-636, Pl. 436, 437, 438.

⁴⁰ Ş. Karagöz, *Eskiçağda Depremler*, Türk Eskiçağ Bilimleri Enstitüsü Yayını, İstanbul 2005, pp. 45, 53.

filled in between the 10th and 13th centuries. On the other hand, the alluvium deposited by Çavuş and Bülbül creeks silting up the mouths of the creeks should be also taken into consideration. The increase in the water level occurring throughout the excavation digs, the sand-pebble-dirt mix, the timber pillar found underneath the wall remains on the floor surface all indicate work carried out in the area to look for solid ground for development projects.

Views on Ancient Chrysopolis Port of Scutarii

Finds, such as amphorae, anchors and fishing rods, as well as the remains of pier-dock-breakwaters, confirm that the area was the port mentioned in ancient sources. Today, the geographical layout of the area is far different from the time when the city was first founded in the 7th-6th century BC, a period in which the port was a deep bay. Ground studies at the square and the condition of the soil observed during the foundation digs of the surrounding buildings clearly indicate the presence of the ancient port. According to results of the ground inspection conducted by DLH as part of the Marmaray Project, alluvium infill and nautical remains with mussel fragments have been observed in the test pittings at six different sites, at a depth of 34.00-41.70 metres. Furthermore, according to information from architect-contractor Demirhan Akyüz, the results of the foundation digs of Kara Davut Paşa Mosque's fountain built in the 1980s - 800 to 1000 metres from the excavation site - yield the same results. A depth of 3 metres was needed for the foundation of the fountain. The timber radial pillars in the mud floor reveal how the port moved towards the land.

Port of Chrysopolis in Ancient Sources

In describing the location of the cities of Byzantium and Chrysopolis, the Arcadian historian Polybius⁴¹ speaks of the Bosphorus, and by extension, the strong current in the sea:

"...Those who wish to cross over from Kadıköy to Byzantium cannot navigate in a straight line due to the strong current in between; they shall follow a curved course to reach the Ox Bay and Chrysopolis and let the current carry them from here to Byzantium..."

The siege of Propontis and Bosphorus during a naval war between Athens and Sparta in 410 BC led Athenians to establish a base in this area. By the end of the 5th century BC, Athens maintained control over the waterways at the most important junction of the Bosphorus, its fleet led by two commanders⁴².

Renowned traveller Texier describes this side of the Bosphorus shore:

"...Washed by the waters of the İstanbul Strait from Kadıköy to the mouth of the Bosphorus, the Asian side extends from north to south, without forming any deep inlets. Ships can dock at the Üsküdar (Scutari) bay, previously deep and later embanked due to housing development."

Crusader de Villehardouin, noted that there was a port near Üsküdar. This port is now Üsküdar Square, currently being excavated for a tube-tunnel transit station. It appears that it was already filled in by 1204 during the Fourth Crusade, but the harbour was still in use. While the considerably deeper shoreline of the 7th-6th century BC was partly silted by the early 13th century, it nonetheless still served as a harbour.

Petrus Gyllius (Pierre Gilles) arrived in Constantinople in 1444 and stayed until 1447. He records his observations and experiences in the context of historic geography⁴³. His observations include the disposal of the debris of the ancient port to make room for the mosque and its complex commissioned on the Asian side by Sultan Süleyman's daughter. A portion of this harbour was filled in when the city of Chalcedon was destroyed and another portion was filled in by Byzantine Emperors to prevent barbarians from seeking refuge or hiding in the bay.

Breakwater Made of Rocks

Discovered in the excavations in front of Mihrimah Sultan Mosque, at the level of +0.48-+0.71 metres, between sewage pipes extending towards the sea and street paving from the Late Ottoman and early Republican years, there are the remains of a breakwater, made of natural rocks, and a jetty. The remains correspond to the northern section of the port, which began to silt up during the Roman Period. The colossal natural block stones are piled on top of one another and they lean slightly toward the sea. The upper sections of the rocks are cut and flattened. In addition, broken marble fragments from ancient times were inserted between the rocks. This row of

⁴¹ *Historia* 43.8-44.5

⁴² H. Merle, *Geschichte der Städt Byzanz und Chalcedon*, Kiel 1916, p. 27; R. Merkelbach, *Die Inschriften von Kalkhedon*, Bonn 1980, p. 92.

⁴³ Petrus Gyllius (Pierre Gilles), *De Bosporo Thracio*, Libri III, MDLXI (İstanbul Boğazı), trans. E. Özbayoğlu, İstanbul 2000, p. 223.

rocks constituting the jetty forms a straight axis in the north-south direction. The top rocks forming the breakwater usually alternate between 2.90 x 2.00 x 0.90 metres and 0.50 x 1.00 x 0.25 metres. Thousands of amphora fragments have been unearthed in the dirt infill of the breakwater formation.

Jetty/Dock (A9-10/67-68 grid squares)

In the grid squares, again in front of the Mihrimah Sultan Mosque-Küçük Hamam and the Fountain of Ahmed III (fig. 16), the remains of a timber jetty/dock have been unearthed. Made of wooden boxes, the jetty slopes toward the sea. The boxes of the jetty have been filled with stones of various sizes and reinforced with a particularly hard mortar; the stones are set in blocks that are adjacent and perpendicular. Largely destroyed, the jetty is fixed to numerous wooden stakes, 1.5-2.00 metres tall and embedded in the sea floor. It is 13.00 metres long in the east-west direction and 7.30 metres long in the north-south direction. The jetty is at the level of -0.30

metres and -0.80 metres and its entire width is 1.95 metres. A study of the mortar yields the famous *pozzolana* hydraulic soil. In his celebrated book of architecture, Vitruvius speaks of the properties and source of this hydraulic *pozzolana* mortar⁴⁴:

"There is also another kind of powder which, by nature, produces interesting results. It is found in the neighbourhood of Baiae and in the lands of the cities on the slopes of Mount Vesuvius. When mixed with lime and rubble, it not only furnishes strength to other buildings, but also, when used in the pylons of jetties, it hardens under water. This seems to happen for the following reason: under these mountainous regions there are many springs and hot earth. And these would not be unless there were huge blazing fires of sulphur, alum or pitch underneath the mountains. Therefore, the fire and the vapour of flame within, flowing through the cracks, makes that earth light and the tufa which is found to come up there is free from moisture. Thus, when these three substances formed in a simi-



16. Üsküdar excavation

⁴⁴ Vitruvius, *de Architectura*/ *Mimarlık Üzerine On Kitap*, İstanbul 1990, book II, sec. VI. 1.

lar manner by the effect of fire are mixed, they suddenly absorb water and cohere together. They are quickly hardened by moisture and made solid, and can be dissolved neither by waves nor the power of water."

However, due to the fact that work is conducted amidst heavy traffic congestion – and only within the trenches indicated earlier– and due to the presence of the historic Fountain of Ahmed III immediately next to the jetty structure, a large portion of the block at the northeastern end has not been excavated. There is a cavity of approximately 30 centimetres between the two block jetties. The box-shaped timber jetty blocks in between are 5.25 metres long and 1.80 metres wide. The wooden blocks (*kibotos*) face the sea or lie in a northeast-southwest direction. Their bases have not yet been entirely identified. It has been observed that the horizontal beams that constitute the edges run deeper than 40 centimetres.

It has been noted that the timber box wall structure discovered at the A6-8/68-70 grid squares (next to the Fountain of Ahmed III) is a jetty-dock remain from Antiquity. Ancient writer Procopius observes that this construction system was also used in the jetties of the Histo-

ric Peninsula. Furthermore, these kinds of jetty construction systems were used throughout the Mediterranean world from the 1st century BC onwards. While the final observations have not yet been completed, it is evident that the south shore of Bülbul Creek, which began to be silted up by alluvium during the Late Roman Period, was a swamp during the Early Byzantine Era and that the architectural structure necessary for the port was built upon land created by a timber radial stake system. As the apsidal structure –which is thought to be a part of the Monastery– is excavated near the jetty, it may be assumed that the jetty structure was in use until the 11th-13th century AD. The ancient jetty/dock remains belong to the port of Antiquity.

Other wooden jetty remains

In the trenches along Hakimiyeti Milliye Street, traces of settlements from the recent past have been encountered. Behind the seven Late-Ottoman sewage canals that extend in different directions but connect to one another –which have been destroyed by a concrete collector– the foundation of an Early Ottoman structure with relatively well-preserved stone-brick-grog walls has been



17. Jetty remains. JKL grid-squares

discovered. Sewage canals that extend in different directions but connect to one another, as well as marble fragments such as pillars and cut-stones from the Ottoman and Byzantine periods have also been discovered in this area. The floors of the canals are paved with bricks.

Grid squares NOP/69-72 (fig. 18)

The unearthed wooden jetty includes an intriguing group of finds. The jetty portion was created by placing roughly 0.25 metre-wide and 5.20 metre-long, carved logs on top of one another in a grid. The logs are attached to one another by large, wooden stakes pegged into mortises on the logs. Large pegs have also been used as connectors; the system is fixed by means of numerous wooden pillars embedded on the pier floor. The top of the large logs is covered

with planks set in the northeast-southwest direction, thus creating the pier floor. Only the central planking boards are still intact; these are also connected to the logs with wooden pegs. The northwest wing of the jetty is set on the sand infill from the creek; the southeast wing, on the other hand, is reinforced, along with the sand, by stones of various sizes. It has been observed that the timber used in the construction of the jetty has been fired and bituminized against decomposition. The dimensions are 8.40 metres by 4.00 metres. The jetty was probably set on the south bank of the Çavuş Deresi, which flowed through the area in the Early and Middle Byzantine periods and later silted up with alluvium. It has been installed on the site in a southeast-northwest direction (level -0.56 metres and +0.31 metres) and southwest-northeast (level -0.30 metres and +0.31 metres) with an incline. Partly destroyed by the cement collector, the southwest wing of the jetty still serves as a busy road open for traffic.



Grid squares JKL/69-71 (fig. 17)

In the trenches across from this excavation area, the remains of yet another jetty of similar wooden logs have been unearthed. However, beneath these remains at the 1.00 metre level, immediately below the surface at the 2.05 metre level, no other architectural remains have been encountered, with the exception of foundation walls of shops from the Late Ottoman-Early Republican periods. The jetty located at the JK/69-70 grid squares was possibly once on the bank of Bülbül Creek, which silted up over time. The wooden jetty built on the northern bank of Bülbül Creek is constructed with the same technique as the jetty at the NOP/69-70 grid squares. Stretching roughly in southeast-northwest and northeast-southwest directions, the jetty is inclined. It is more damaged than the jetty on the south. Large logs set on the floor in the southeast-northwest and northeast-southwest directions are 0.25 metres wide and 5.20 metres long. They are installed in grid form at an inclination of -0.65 metres and -0.71 metres in the north-south direction and -0.78 metres and -1.23 metres in the east-west directions. The dimensions are 5.25 metres by 8.20 metres. In the JKL/69-70 grid squares, a continuation, or counterpart, of the wooden jetty encountered at the NOP/69-70 grid squares has been identified. At first, it was thought to have been built on the northern bank of Çavuş Creek in the Byzantine era, but studies now show that it dates from the Early Byzantine Period or even earlier.

18. Jetty remains. NOP grid-squares

Construction technique

0.25 metre-wide and 5.20 metre-long, large, carved logs are placed on the floor on top of one another in a grid pattern. The logs are attached with large wooden stakes pegged into mortises on the logs. Large pegs have also been used as connectors. The system is fixed by means of the numerous wooden pillars embedded on the pier floor. The tops of the large logs are covered with planks set in the northeast-southwest direction, thus creating the jetty floor. Only a small portion of these planking boards is still intact. These are connected to the logs with the same type of wooden pegs. It has been observed that the timber has been fired and bituminized against decomposition. Almost the entirety of the relatively more intact east wing of the jetty has been unearthed; the more damaged west wing of the jetty still continues along the JK/69 grid square located on the busy road open for traffic.

All these methods are mentioned by Vitruvius⁴⁵:

"... When the place does not afford the powder named, the following method is to be adopted. Double dams are constructed, well connected with planks and chain pieces, and the cavity between them is filled up with clay and marsh weed well rammed down. When rammed down and squeezed as closely as possible, the water is emptied out with screw pumps or water wheels, and the place is emptied and dried, and the foundations excavated. If the bottom be of loose texture, it must be dug out till a solid bottom is come to, wider than the wall about to be erected, and the wall is then built of stone, lime, and sand. ..."

Finds from the port

The discovery of stone anchors alongside the numerous amphorae discovered in the excavation leaves no room for doubt that Archaic-Hellenistic Chrysopolis/Roman Scutari functioned as a port.

Stone anchors: Since stone is a very durable material, the anchors have survived. The nine stone anchors found in the Üsküdar Marmaray excavations were discovered at the test pitting conducted at 6-7 metres. Only one of the anchors has holes (fig. 19). Although it is most probably dated to the Classical Era, its use must have continued into later periods. In early nautical history, anchors were simple, coarse rock forms. Serving as important equipment in the docking or anchoring of ships, the anchors initially sported a single hole for tying a rope. Later designed in a triangular form, single-hole anchors gained two additional holes to insert wooden poles, or "claws" that could secure the anchor on the seabed. Researchers emphasize that anchors of this kind were used across the Mediterranean basin as of 2000 BC and that evolving over time, they remained in use throughout the centuries⁴⁶. In *The Iliad*, Homer of Ionia speaks of the stone anchors that moored ships⁴⁷:

"...When they had arrived within the deep harbour, they furled the sail, and stowed it in the black ship, and the mast they lowered by the forestays and brought it to the crutch with speed, and rowed her with oars to the place of anchorage. Then they cast out the mooring-stones and made fast the stern cables, and themselves went forth upon the shore of the sea..."



19. Ancient stone anchors

⁴⁵ Ibid, V, sec. XII. 1.

⁴⁶ H. Özdaş, *Antik dönem çapa yapım teknolojisi, sınıflandırması ve Bodrum Müzesi çapaları*, Ankara 1992, p. 80, figs. 1-3, drawing: 2.

⁴⁷ Homer, *The Iliad*, sec. 1, line: 486.

It has been established that Homer, the world's first known epic poet, was born in Smyrna (İzmir) and lived between 800 and 700 BC. Therefore, Homer's reference to stone anchors used both in his time and in the epic story of the Trojan War in 1200 BC, indicates that these anchors had been employed since the Bronze Age.

Amphorae: In order to store and transport a variety of merchandise by sea, amphorae were produced in Western Anatolia and in the entire Mediterranean basin as of the Colonization Period (fig. 20). Made of terracotta, the style of these vessels varies according to region. They are unearthed in almost all excavations conducted at port cities and even further inland. Studies reveal that Chios, Clazomenae, Lesbos, Samos and Miletus were among the leading amphora production centers of the Archaic Period. There emerges an amphora style unique to the ceramic workshops of each center. Among these, the amphorae of Clazomenae and Chios are easily distinguishable. One unique type, with a rounded mouth, flattened, vertical handles, a cylindrical neck, an ovular body and a slightly flaring base, is generally referred to as Eastern Greek⁴⁸. Amphorae with glazed, linear bands, decorated with an "S" curve on the shoulder are often recognized as the Chios-type. The amphorae fragments discovered in the Marmaray Üsküdar excavations are analogous to the West Anatolian finds, particularly the Clazomenaen amphorae⁴⁹. These finds demonstrate the commercial and cultural ties between the Port of Chrysopolis and Clazomenae during the Archaic Period.

20. Byzantine amphora.
11th-13th century AD

Conclusion

Although the excavations have not yet been completed, the following summary can be offered on the city and port of Chrysopolis:

About the Ancient City...

What is presented in the preceding pages is an overview of a study – yet to be completed – that provides some "preliminary" finds on the history of Üsküdar. Once the excavations and the scientific studies are finalized, Chrysopolis will assume its unique place in the history of Anatolian civilization. Within the context of the limited number of finds included in the exhibition project, we can list the historic development of the region as follows: Late Ottoman and Early Republican, Early Ottoman and Late Byzantine, Early Byzantine and Late Roman, Classical Greek and

⁴⁸ Y. Sezgin, "Clazomenian Transport Amphorae of the Seventh and Sixth Centuries", *Symposium Klazomenai, Teos and Abdera: Metropoleis and Colony, Proceedings of the International Symposium held at the Archaeological Museum of Abdera*, 20-21 October 2001, Salonica 2004, p. 169.

⁴⁹ E. Doğer, "Klazomenai'de antik kaynaklara dayalı tarımsal ihrac ürünler ve ticari amphora üretimleri üzerine gözlemler", *10th Turkish History Congress*, 1986/2, Ankara 1990, p. 701.

Archaic. Üsküdar was founded in Antiquity –around the same time as Chalcedon– by colonists and experienced its own Classical-Hellenistic and Roman periods. It was also a port city that served as the beginning and the end of military and trade routes that extended into Anatolia during the Byzantine and Ottoman times, as well as a pier/dock for crossing over to the Historic Peninsula. On the upper stratum of each trench, broken pottery sherds, piper bowls, and fragments of various glass and metal objects of daily use have been discovered. Considered refuse when discarded, these finds are remains of a rapidly changing metropolis, collected below the asphalt. The rescue excavations of the Marmaray Project have enabled us to access the oldest periods of the area. Had it not been for this project, the world of archaeology would never have encountered these important finds, the history of the area dating back to 7th century BC, would not have been revealed, and historic facts, embedded only in legends in ancient sources, would have remained obscure.

About the ancient port...

Despite the limited resources of the excavation, a partially excavated wooden jetty-pillar structure is rarely encountered in the entire Mediterranean region. It is only natural that, surrounded as it is by seas, the peninsula of Asia Minor has been dotted with many ports since Antiquity. However, as far as we know, research in this area is limited. In the excavation work conducted on ancient coastal cities, information on ports is often mentioned between the lines of the annual reports of the excavation team. The study of a port is naturally different from land excavations and has its own difficulties.

According to geological ground surveys, while Üsküdar Square was a deep bay in Antiquity, it was later sil-

ted up and transformed into a lagoon. Studies in this field are still in progress. When the first colonists arrived in the Archaic Period, the area was a deep bay, considerably recessed from the shoreline. A parallel example is the port of Clazomenae (Urla), which has changed geographically since ancient times⁵⁰. As a natural bay, the Üsküdar area enticed its first colonists in the 7th-6th centuries BC. Alternatively, due to the strong currents of the Bosphorus along the coast of Asia Minor, colonists had to seek refuge on these shores.

Two rivers used to flow down valleys that descended to Üsküdar Square. These were Bülbül Creek, between the present-day İcadiye and Toygar-Selamsız localities, and the Çavuş Creek, between the Toptaşı-Murat Reis and Toygar-Selamsız axes. The ancient courses of Çavuş and Bülbül creeks are now streets with heavy traffic use. The alluvium deposited by both creeks silted up the coast and formed the present-day Üsküdar Square. Slopes begin at the end of this plain, which is considerably silted from the coast inwards. At the beginning of the Marmaray Project, various test pittings were conducted on the geographical setting of the area. Geological ground surveys indicate that Üsküdar Square is indeed the Port of Chrysopolis – mentioned in historic sources – at the entrance of the Bosphorus. During the Late Byzantine Period, the silted-over harbour was filled with dwellings.

With its partially excavated wooden pier, its jetty made of hydraulic mortar, its breakwater made of natural rocks, thousands of amphorae fragments from the ancient cities of the Aegean, and stone anchors, Chrysopolis was once an important port. With the help of this port, the coast maintained its strategic importance, both in the Byzantine and in the Ottoman periods, as the first stopover on the way to and from Anatolia.

⁵⁰ Y. Ersoy, *Clazomenae: The Archaic Settlement*

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Sources / abbreviations

İstMitt	İstanbul Mitteilungen
LIMC	Lexicon Iconographicum Mythologiae Classicae
MÇKKS	Müze Çalışmaları ve Kurtarma Kazıları Sempozyumu
RE	Paulys, Realencyclopaedie der Classischen Alterums wissenschaft
RME	Religious and Moral Encyclopedia
TEBE	Türk Eskiçağ Bilimleri Enstitüsü
TTK	Türk Tarih Kongresi

Üsküdar square excavation - I as part of the Marmaray Station Project grid-squares BS/56-65

Şeniz Atik*

In the process of historical development, cities as settlements have a long past. We refer to this past as "the history of the city." Since the early 20th century, the science of archaeology has developed rapidly, transforming itself both in terms of the areas of interest and in terms of research methods. It is understandable, therefore, that the fields of research began to interest a larger segment of society. Interest in history significantly increased as a consequence of the advanced urbanization of modern society created by the industrial revolution. The archaeology of settlements, in particular, continued to develop through researching the features of physical cultural data on the entirety of settlements. It also focused on the concept of the initiation of archaeological research in cities. This concept further influenced the development of the science of archaeology. Hence, the remains of historic cities are now conceived as an integral part, not merely of methodologies or national history, but rather of a global culture. This is why it is absolutely necessary and beneficial to share the data from urban archaeology with society and the inhabitants of the cities in question and to make use of that data as part of a larger project.

As one of the important settlements of Istanbul today, the Üsküdar quarter has gained further recognition in the course of the excavation work conducted as part of the Marmaray Tube-tunnel Transit Project in progress.

As part of the upgrading of the Gebze-Haydarpaşa, Sirkeci-Halkali commuter lines and the work on the Istanbul Strait Tube Transit project, under the Ministry of Transportation, archaeological excavations and test pittings were begun on 16 June, 2004, under the supervision of the Directorate of Istanbul Archaeological Museums (fig.2). Located in an area that creates a junction and a park between Balaban and Hakimiyet-i Milliye Avenues, the cut-and-cover underground station construction site digs have been granted an excavation license - number 1606 and dated 22 January, 2005 - by the Turkish Ministry of Culture and Tourism's Directorate of Cultural Heritage and Museums.

The initiation of archaeological test pitting prior to construction in this area is a first in this sense. The excavation commenced on 16 June, 2004, in compliance with the decisions of the Board for the Protection of Cultural and Natural Heritage, under the auspices of Istanbul Archaeological Museums. During the initial work at Üsküdar Square, eight archaeologists, two architects, one photographer and one topographer participated in the team.

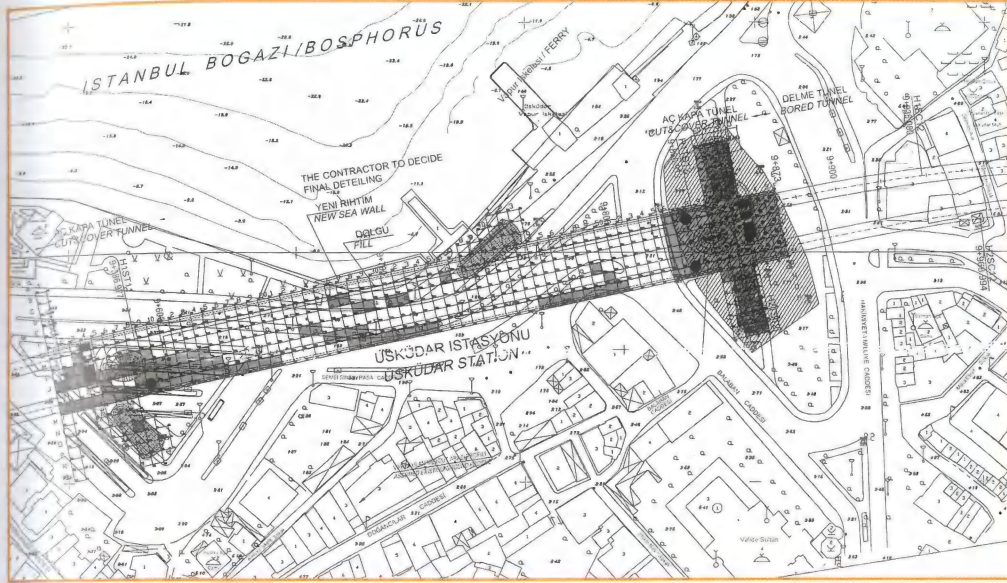
* Dr., Archaeologist, Istanbul
Archaeological Museums

Carried out at grid squares BS/56-65 and areas marked on the layout plan, the excavation work continued for almost one year.

Resumed following the discovery of Late Ottoman building remains in the initial test pitting, excavation was also carried out across an area that extends from Pi-

er Square to Şemsi Paşa Mosque (fig.2). This area was closed off without interrupting the flow of traffic.

This article includes the work carried out at the BS/56-65 grid squares in Üsküdar excavations. Almost all upper stratum architecture has been opened in this area and test pittings have been carried out in certain designated areas.



1



2

1. Marmaray-Üsküdar excavations layout plan
2. BS/56-65 grid-squares, following the completion of Üsküdar Pier Square excavation

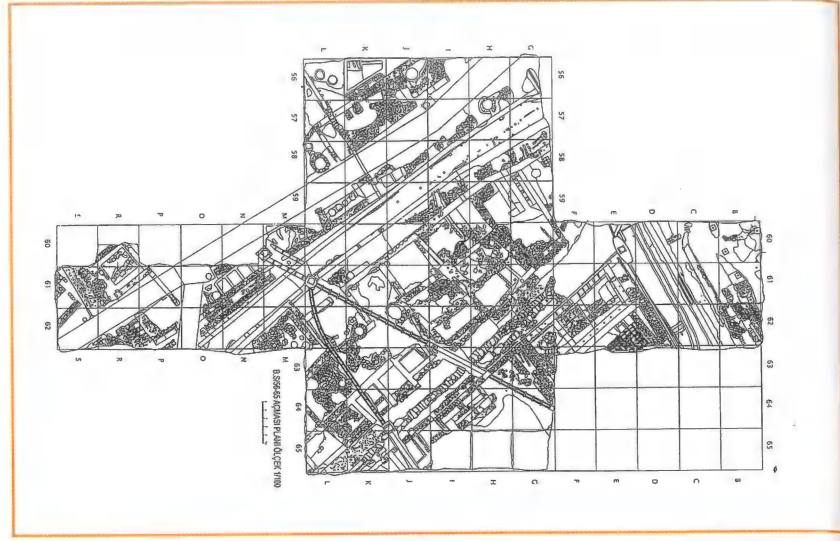
Until recently, information on the history of Üsküdar was limited to accounts of the writers and travellers of Antiquity. This is why the excavations conducted in this area are of utmost importance. Nonetheless, in order to clarify and interpret the excavation finds, it is important to briefly mention ancient writings about the history of Üsküdar.

There is little information from ancient sources on Üsküdar, located at the entrance of the Istanbul Strait on the Asian shore. According to some sources, the name of Üsküdar varies with each period. While it is referred to as Chrysopolis (The City of Gold)¹ in Antiquity, it is known as Scutarii during the Roman Era². Damalis is among other former names of Üsküdar³.

In the *Geographica* (Geography), the ancient Greek writer Strabon argues that the Üsküdar of his day was a village⁴. In his *Anabasis* (March Up-Country) penned in the late 5th century BC, Xenophon recounts that in their attempt to return to their homeland, his Greeks "reached Chrysopolis from Chalcedon" to reach Byzans, sold their booty and stayed for seven days⁵.

According to Prof. Dr. Semavi Eyice's research⁶, there are Byzantine accounts of a large and important monastery, as well as its palace or villa in Üsküdar, commissioned by Philippicos, husband of Emperor Mavrikios's (582-602) sister Gordia, in 595 to honor the Virgin Mary. There are no references to this monastery in Byzantine sources after the 10th century. The location of the monastery in Üsküdar is still unknown. It is assumed that perhaps the name of Ayazma (Sacred Greek Fountain) Mosque refers to this monastery⁷. Eyice also mentions the absence of small finds since there are no historic traces in Üsküdar that date to the Byzantine Period⁸.

Despite its historic importance, the Üsküdar region shows no significant development from the Archaic to the Byzantine periods. While Texier associates the slow progress and development of this city with its proximity to Byzantion, he also stresses that, as it is located at the point where the Asian shore is nearest to the European shore, Üsküdar has traditionally been a busy transit point⁹. In short, it is argued that Üsküdar was never an important port, but rather the starting point of the road that crossed from Asia to Europe. R. Janin poses that during the Byzantine Period, Üsküdar was an insignificant provincial town on the Asian shore and that it was not until the Ottoman Era that Üsküdar expanded in size¹⁰. Other sources such as Le Bruyn, on the other hand, find that Üsküdar was "filled with an abundance of shops that a crowded city of good standing would need"¹¹.



3. Üsküdar Pier Square
BS/56-65 grid-square plan

¹ S. Eyice, *Bizans Devrinde Boğaziçi*, İstanbul Üniversitesi Edebiyat Fakültesi Yayını, no. 2236, İstanbul 1976, p. 49, endnote 106; C. Texier, *Küçük Asya Coğrafyası, Tarihi ve Arkeolojisi*, v. I, translated by Ali Suat, Ankara 2002, pp. 125-126.

² S. Eyice, *Bizans Devrinde Boğaziçi*, İstanbul Üniversitesi Edebiyat Fakültesi Yayını, no. 2236, İstanbul 1976, endnote: 106. Scutarii, Scutum means the bearer of an escutcheon. This etymology is based on the information that there used to be a barracks for Roman soldiers in the area.

³ C. Texier, *Küçük Asya Coğrafyası, Tarihi ve Arkeolojisi*, v. I, translated by Ali Suat, Ankara 2002, p. 129.

⁴ Strabon, *Coğrafya* (Geographica), Books XII, XIII, XIV, translated by A. Pekman, book: IV/2, p. 52.

⁵ Xenophon, *Anabasis*, translated by Hayrullah Örs, second edition, book: VI/38, İstanbul 1962, p. 281.

⁶ S. Eyice, *Bizans Devrinde Boğaziçi*, İstanbul Üniversitesi Edebiyat Fakültesi Yayını, no. 2236, İstanbul 1976, p. 50.

⁷ Ibid, p. 51.

⁸ It has been confirmed that the majority of the small finds discovered in the test pittings conducted at the excavation site are dated to the Late Roman- Early Byzantine periods (4th-7th centuries) and the presence of finds that date as far back as the 4th century BC has been verified. The presence of earlier periods has been confirmed by the plethora of finds from the other excavations included in the Marmaray project and displayed in this exhibition.

⁹ C. Texier, *Küçük Asya Coğrafyası, Tarihi ve Arkeolojisi*, v. I, translated by Ali Suat, Ankara 2002, p. 126.

¹⁰ R. Janin, "La Banlieue Asiatique de Constantinople", *Echos d'Orient*, issue XXI, 1992, p. 338.

All of this information indicates that Üsküdar was, beyond doubt, a city and the first stop before reaching Europe. The fact remains that, although Üsküdar preserves its significance as a crossing point between Europe and Asia through the centuries, it was not a highly developed settlement until the Ottoman Era.

According to Mantran in reference to Evliya Çelebi, during the Ottoman Period, Üsküdar features many opulent bazaars, eleven caravanserais, and 2600 shops¹². In addition, it appears that there was no Bedesten in Üsküdar and – unlike İstanbul – the tradesmen were not confined to certain designated areas, but were scattered across town, a fact which indicates that this city played no major role in local commerce.

Much like d'Arvieux and du Loir, Tournefort confirms Üsküdar's status as a crossing point to Europe and emphasizes its significance with the remark, "This is one of the primary meeting points of Armenian and Persian caravans and merchants who come to Europe for trade."

Üsküdar also developed as a port during the Ottoman Period and served as the first base for the equipping of armies dispatched to Asia. The postal service established in Üsküdar under the Persians was carefully maintained during the Roman Period, and, although it began to disintegrate under the Byzantine Empire, it was re-systematized during the Ottoman Era. Numerous religious and cultural structures built in Üsküdar during the Ottoman Period are still extant.

Sources describing Üsküdar as a port during ancient times are insufficient. Some sources suggest that there were no harbours in the area¹³ and that an adequately deep inlet never existed on this corner of the Bosphorus¹⁴. Later, it is also mentioned that this area was silted up and that, led by two generals, a fleet of 30 ships was appointed to protect the port¹⁵.

As seen from these inconsistent views, the mention of an "inlet" here during the Archaic Period seems to suggest that it silted up over time. Since the Bronze Age, ports have traditionally been established on river mouths¹⁶. The existence of Bülbül and Çavuş creeks in Üsküdar suggests that Üsküdar Bay, where they poured into the sea, provided a suitable environment for a harbour. Texier relates that stones from the breakwater built to stem the flow rate of the current were still visible on the seabed¹⁷. The plethora of Early Roman (catalogue no. Ü22, Ü23)-Late Roman and Early Byzantine Period (4th-9th century) ceramics (catalogue no. Ü24, Ü29) we accessed and had the opportunity to work with following the test pitting at -7

metres, as well as a lead seal (catalogue no. SK2)¹⁸ confirm information that this area was an inlet at the time. When we take into account information from the sources, we can see their accuracy that this was a small port or an inlet where ships could seek shelter. It is also known that ancient ports established at the mouths of rivers are naturally silted¹⁹ by the alluvium deposited by rivers and lose their character as ports. Numerous large and possibly sedentary sea mussel shells have been encountered in the test pittings. In light of this information, it can be said that Üsküdar Bay was first naturally silted, and, later, as it lost its port character, was filled in. Test pittings provide us with the date of embankment. Based on the studies we conducted in the area, the process of silting and infilling, which began in the 8th century, continued at intervals and the area was completely filled in during the Late Ottoman Period to make room for housing development (fig. 9). The studies, which look into the history of the area and the subsequent data, are briefly summarized below.



¹¹ A. Güneş, "XVI ve XVII. yüzyıllarda Üsküdar'ın Mahalleleri ve Nüfusu", *Üsküdar Symposium I*, 23-25 May 2003, İstanbul 2003, endnote 17 on p. 46. For further info, please see Cornelis de Bruyn, *Reisen Cornelis de Bruyn, Henrik van Krooneveld*, 1698.

¹² R. Mantran, *17. yüzyılın İkinci Yarısında İstanbul-Kurumsal, İktisadi, Toplumsal Tarih Denemesi*, v. 1, translated by M. Ali Kılıçbay, E. Özcan, Ankara, 1986, First Edition, p. 82.

¹³ Travellers such as Charles Texier convey this information. However, by using the phrase "formerly deep and later filled in for housing development" immediately thereafter, they have tried to express that this area was an infilled inlet. C. Texier, *Küçük Asya Coğrafyası, Tarihi ve Arkeolojisi*, translated by Ali Suat, v. I, Ankara 2002, p. 96.

¹⁴ Ibid, p. 96.

¹⁵ Ibid, p. 126. Texier writes, "The Athenians captured Üsküdar and surrounded it with walls and arriving from the Black Sea (Pont Euxin), they established the treasury and tax offices for the collection of tithe from the ships crossing the Bosphorus. A fleet comprised of thirty ships and led by two commanders was appointed to protect the port. It has been understood that a portion of this port was filled in when the city of Chalcedon was destroyed, while the other portion was filled in by the Byzantine emperors so that the barbarians could not find a place to flee to and hide. It also appears that the remainder of the harbour was filled in during the construction of the mosque built in honor of Sultan Süleyman's daughter Mihrimah Sultana and that some of the stones from the breakwater built to deflect the strong flow of the current were still visible on the seabed."

¹⁶ Ü. Yalçın, C. Pulak and R. Slotta, "Uluburun Gemisi 3000 yıl Önce Dünya Ticareti", *Catalogue from the exhibition held at the German Mining Museum of Bochum*, 15 July 2005 and 16 July 2006, Bochum 2005, p. 322.

¹⁷ C. Texier, *Küçük Asya Coğrafyası, Tarihi ve Arkeolojisi*, translated by Ali Suat, v. I, Ankara 2002, p. 126.

¹⁸ Lead seal (excavation inv. no. MRÜ05/291, Museum inv. no. 1784/4). The seal has a diameter of 2.9 cm and was discovered at G/65, -4 m. It carries a depiction of two emperors who are portrayed in profile on the obverse. On the left is Constantine V and on the right is Leo IV, both wearing a divitision and chlamys, with crowns and beards. Above, there is a cross between the two. On the reverse side, above the line, the Loros-dressed Leo III is depicted facing. The field on the left is marked with indiction letters (X) and (Z) and the right field carries the letter (Θ). The four-line inscription below Leo III's bust reads, ΤΩΝ ΒΑCΙΑΙΚΩΝ ΚΟΜΜΕΡΙΩΝ ΘΑ ΝΙΑC / Ton Basilikon Kommerkion Thynias. (Seal of the Thynia Imperial Commerce House, 751-783; pls. see. Zacos 1972, v. I, pp. 330-331, seal 253). The seal has been read and dated by Dr. Vera Bulgurlu.

¹⁹ Ü. Yalçın, C. Pulak and R. Slotta, "Uluburun Gemisi 3000 yıl Önce Dünya Ticareti", *Catalogue from the exhibition held at the German Mining Museum of Bochum* between 15 July, 2005, and 16 July, 2006, Bochum 2005, p. 322.

History of Üsküdar square

Information on the silting and embankment of Üsküdar Pier Square is revealed, as mentioned above, in written sources. Although there is information available that the first silting of the port dates as far back as Antiquity, the data we have at hand is provided by Texier²⁰. C. Texier writes,

"Washed by the waters of the Istanbul Strait from Kadıköy to the mouth of the Black Sea, the Asian shore stretches from the north to the south without any inlets. The ships can dock at the formerly deep Üsküdar (Scutarii) Bay, which was later filled in to accommodate housing development."

Texier further notes, "Pierre Gilles witnessed the remaining ruins from the mosque of Sultan Süleyman's daughter commissioned on the Asian side, as they were being discharged into this bay"²¹. The aforementioned mosque is the present-day Mihrimah Sultan Mosque.

There is information available that in the ensuing years the refuse from the Yeni Valide Mosque digs were used to fill in this area, which still appeared as an inlet in 1710²². The excavations confirm that this area was filled in over time and opened to housing settlements (Pls. see above DEF/60-62; figs. 8, 9).

In the course of the Üsküdar Square excavation, which continued for nearly a year, the center section (BS/56-65 grid squares), where the first work was initiated and a 10,000 square metre T-shaped area that continues to the back of Şemsi Paşa Mosque, was divided into grid squares of 5 x 5 metres and numbered accordingly (fig.1).

Work was initiated first in the center section and was confined to the grid squares seen on the layout plan. Once it became apparent that the first excavated remains were Late Ottoman architectural ruins, a preliminary study was conducted, and it was observed that a portion of the excavated architectural elements were marked on the 1933 Pervitich insurance maps. Accordingly, it was decided that overlapping the excavation site grid with the corresponding map sections would prove useful in tracing the ruins. In this respect, the excavation topographer has produced excellent results. First, the Pervitich plans of Üsküdar, which vary in scale and are available in 4 to 5 map sections, were brought to the same scale, and the grid squares included on the excavation site layout plan were applied to these maps. This work also served as a road map for the subsequent Üsküdar excavations. The foundation remains of Late Ottoman buildings – some of which can be seen on these maps – and a significant portion of other buildings – which are a continuation of these buildings but are not included on this map – have been unearthed. Among the important ones are the remains of a tannery, of the Arasta Bazaar and the Raft Foundation with the grid plan.

4. EF/60-62_DV 5, PTT manhole and Space 12
5. EF/60-62_Street and shops opening up to it
- 6 [opposite page]. P/61-62 overall view - foundation remains of the arasta bazaar



4-5

²⁰ C. Texier, *Küçük Asya Coğrafyası, Tarihi ve Arkeolojisi*, translated by Ali Suat, v. I, Ankara 2002, p. 96.

²¹ Ibid, p. 96.

²² M. N. Haskan, *Yüzyıllar Boyunca Üsküdar*, v. 3, İstanbul 2001, p. 1490.

Both the site included in the BS/56-65 grid squares, and the other excavated areas appear to have been destroyed by river beds, modern-day clean water channels and sewage systems, as well as other infrastructure of the city (fig.4). Some of this infrastructure was still in use during the excavations. Therefore, excavations here have been conducted under difficult conditions. Despite the adverse circumstances, based on the data obtained from BS/56-65 grid squares, important finds from Üsküdar's Late Ottoman and earlier periods (Greek, Roman, and Byzantine) have been unearthed (catalogue no. 1-20).

Noteworthy data and buildings unearthed on site

In the excavated central section (BS/56-65), the general contours of a large street and small shops that open onto this street have been excavated (figs. 2, 5). Marked as Arasta Street on the Pervititch maps, this street is comprised of four phases (fig. 5). Sewage pipes pass underneath the mid-section of the main street, whereas clean water channels pass in front of the shops. These channels must have been rebuilt in several stages. A bowl discovered in Zone 11 on the EF/60-62 grid square is worthy of note. This bowl indicates that Late Byzantine forms continued during the Early Ottoman Period (catalogue no. Ü34).

The fire strata seen clearly throughout the area and at the cross-sections provide us with important clues about dating the settlements above the fill. At every period in history, Üsküdar, like Istanbul in general, has been exposed to large fires and earthquakes. The earliest Ottoman-Period fire in Üsküdar can be traced on the excavation site. It occurred on 22 October, 1722. This fire started at a store near Mihrimah Sultan Mosque and enveloped not only the adjoining houses and stores, but also the tannery, Bat Bazaar, Haffafhane (shoe-making workshop) and the Small Hamam²³. Again, during a fire that started near the Yeni Valide Mosque on the night of 8 April, 1724, a number of houses and stores were burned down²⁴. A fire that occurred at Üsküdar Bazaar on the evening of 2 September, 1763 (1177), spread in five directions and lasted 18 hours²⁵. The traces of the fire documented on BS/56-65 grid squares confirm this information. It has been possible to trace the fire in almost all the cross-sections of the area, including the tannery.

Of the excavation work conducted, only a few significant architectural structures and test pitting finds will

be discussed in this article. Results from these studies will also be included.

Arasta Bazaar (Bat Bazaar) foundation remains

Some historians indicate that the Arasta Bazaar, the remains of which we encountered at RS/60-62, belonged to the Rum Mehmet Paşa Foundation and was constructed prior to 1470 to generate income for the Rum Mehmet Paşa Mosque and complex²⁶. It appears that the Arasta Bazaar had gates opening to both streets. The gate that provided access to Hakimiyeti Milliye Street was referred to as the Arasta Gate, whereas the one on the Yeni Cami (Mosque) side was known as the Balaban or Imaret Gate. Both gates were made of neat ashlar masonry and featured arches with sawtooth eaves over the gates. According to the author of *Mirat-ı İstanbul*, the bazaar was covered with a semicircular vault and it consisted of nearly fifty shops²⁷.

These dilapidated stores, which were used by second-hand furniture dealers, were completely removed in 1956. An engraving revealing the condition of Bat Bazaar prior to 1956 and the foundation walls of the Arasta Bazaar (fig.6) the remains of which we have discovered at the RS/60-62 grid squares, as well as a few artifacts unearthed in this area are included in the catalogue. Among these, an Ottoman bowl from the 15th-16th centuries was discovered at the -1.00 -2.50 metre level (catalogue no. Ü35), whereas a pottery lamp or a pedestal bowl unearthed at -2.30 -2.80 metres is dated to the 9th-10th century (catalogue no. Ü33). The wares found at R/60-1.90 metres offer clues about the function of the Arasta Bazaar (catalogue no. Ü31).

²³ Ibid., p. 1496.

²⁴ Ibid.

²⁵ Ibid.

²⁶ Ibid, p. 1461.

²⁷ *Mirat-ı İstanbul*, İstanbul Alem Matbaası-Ahmet İhsan ve şürekası, 1314, p. 98.



Foundation remains of a tannery

The remains of a tannery, as seen on the Pervititch Maps, were discovered at the GHIIJ/56-59, K/57-59, L/57-60 and MNO/60-61 grid squares.

According to Evliya Çelebi, the Üsküdar Bazaar was comprised of two thousand and sixty shops. It had no "Bedesten"²⁸ but all kinds of valuable objects could be found there, for the bazaar included a variety of artisans and craftsmen. In the layout of the bazaar, there weren't separate markets for each craft. The artisans were mixed in no particular order. This is why the presence of a tannery within the bazaar does not seem unlikely. In fact, even this tannery used two different locations²⁹.

In the course of the excavations, the continuation of W. 81 - previously identified at the northeastern corner of the grid square at grid squares L/60 and NO/61 - has been unearthed. A portion of W. 81 is crossed by a concrete pipe that passes through this area. It appears that in the NO/61 grid-square portion of W. 81, an addition has been made to the upper section of the wall in front of the workshops. At the northwest corner of the grid square, (level: -1.82 metres) the mouth of a well made with stones and weak grog has been identified. Most of this well, of which only a small portion is seen, is located in the unexcavated M/59 plan grid square.

A floor made of lime mortar (level: 1.82 m) has been excavated between the well and W. 81. The southeast corner of this floor is damaged by the unused concrete pipe and above the floor is a 0.05 metre-thick fire stratum. The well and the lime mortar floor are similar to the well and lime mortar floor excavated at grid square L/58 and belong to the tannery.

Grid foundation raft remains

Within grid square DEF/62, once the nearly 62 centimetre-thick lime mortar vault fill covering the entire area and referred to as a stone floor had been removed, a 5 centimetre-thick brick leveling was discovered. And below this fill, a grid floor made with bonding timber was unearthed (fig. 8). Timber piles with diameters of ten, eleven, and twelve centimetres embedded in the ground have been discovered underneath this grid floor. The piles are installed in a way that allows them to overlap with the horizontal bonding timber at the wooden breakpoints and have been secured with pegs. The pegs are 14-18 centimetres in length. The grid apertures are separated from one another with 10 centimetre-bonding-timber sockets. By filling the sockets with lime mortar and rubble stones, a strong



footing was created. This entire structure constitutes the foundation. It has not been possible to trace the grid foundation bindings and their continuation, which appear to continue underneath grid square EF/63, because grid square EF/63 remains outside of our work area. Furthermore, the narrowness of the work area makes it impossible to reach any conclusions about the function of the grid plan and the architecture of the superstructure. Yet, it can be seen that, in order to build a multi-storey structure in a marshy area, a strong foundation was laid and, therefore, such a system was developed. It is possible to see in other areas as well that the ground in this particular region has been reinforced with timber piles (fig. 9). The Late Byzantine-style gates discovered at F/62 Zone 10 (catalogue no. Ü33) and EF/60-62 Zone 11 are significant in that they show that the same style continued to be employed during the Early Ottoman Period.

7. M/61-62. Stone flooring and kilns of the tannery

8. M/61-62. Wooden barrels from the tannery

²⁸ Central area in a bazaar where valuables, such as antiques, jewelry, etc. are sold (T.N.)

²⁹ M. N. Haskan, *Yüzyıllar Boyunca Üsküdar*, v. 3, İstanbul 2001, p. 51.

Test pitting in the area

As mentioned above, while it is known that the excavation area was silted or filled in intermittently across time, test pitting was required in designated areas to access levels below the fill level. The finds and levels of the test pittings are briefly presented below. In the course of the test pittings, conducted at three different points in the area, the upper strata reveal only 17th century, blue and white Iznik bowl fragments and a crate each, of Ottoman ceramics. Below a certain level, sherds of glazed Byzantine pottery, base sherds with stamped decorations, and a plethora of Late-Roman-Early Byzantine (4th-7th centuries) bowl sherds have been discovered. Among the finds are fragments of tripods, amphorae, Roman bowls and Hellenistic ceramics, some of which date back as far as the 5th-4th century BC. A lead seal (pls. see catalogue no. Ü30) and coins dated to the Byzantine Period have also been unearthed. The areas and profiles of the test pitting are detailed below.

Test pitting 1: K/56 (-4.00m/-4.60m)

Few Roman ceramic fragments, many Late Roman-Early Byzantine pottery lamps (catalogue no. Ü24) and pottery lamp fragments, ampullae (catalogue no. Ü26) and sherds, scent bottle fragments, unglazed Byzantine amphorae and kitchen bowl sherds, a very limited number of glazed pottery sherds, one unglazed lid fragment, one glass mouth fragment, and marble fragments (one shaped like a lion's paw?) have been discovered.

Test pitting 2: IJK 62/63 interior of space 13 (-3.00 m/-7.00 m)

A plethora of unglazed amphora and jug fragments, very few kitchen bowl fragments, very few glazed pottery sherds, Roman-Late Roman-Early Byzantine (4th-7th centuries) glazed pottery sherds (catalogue no. Ü22), marble, glass and brick fragments, glazed base sherd with incised decorations, numerous pottery lamps (catalogue no. 5) and pottery lamp fragments, body fragment with graffito, and tripods for kilns (catalogue no. Ü32) have been discovered. Early Byzantine pottery fragments, scent bottle, double handle (loop handle) fragments, fragments of a bowl with thin walls, glass fragments, unstamped brick fragments and ware sherds have been found.

Test pitting 3: GHI 64/65 (-1.00 m/-2.00 m)

A plethora of unglazed Ottoman pottery sherds, amphorae fragments (Byzantine), a limited number of kitchen



9



10

9. DEF/62 Grid foundation (raft foundation)

10. GHI/65. Wooden stakes are used to create a space in the swamp area.

bowl fragments, numerous measurement bowl fragments, a limited number of white-painted (late Ottoman) bowl sherds, numerous Byzantine and Ottoman glazed pottery sherds, numerous glazed pottery lamp fragments (Late Byzantine?), glazed-unglazed candles-tick fragments, a plethora of pipe bowl and tobacco bowl fragments, glass and porcelain fragments, a bronze fragment, brick fragments with K (more than one for the first time), a base fragment with paint residue, a tripod, unglazed pipe fragments, Kütahya-İznik-Milet pottery sherds, an inkwell fragment, brick fragments and bronze dirhem/silver coins (catalogue no. Ü38) have been discovered.

(-3.10 m/- 5.00 m)

A plethora of Byzantine amphorae fragments, glazed and unglazed kitchen bowl fragments, numerous Roman-Late Roman-Early Byzantine pottery sherds, Hellenistic and Byzantine glazed pottery sherds, unglazed pottery lamp fragments, a scent bottle, base and mouth fragments (Late Roman-Early Byzantine), unglazed lid fragments (Byzantine), unglazed kiln objects, glass fragments, an amphora fragment with sgraffito, a marble slab fragment, a Byzantine lead seal (seal of the Thynia Imperial Commerce House from 751-783) have been discovered.

(-5.00m/-7.00 m)

A plethora of Byzantine amphora fragments, unglazed pottery sherds, a limited number of (Byzantine-Ottoman?) bases and glazed-unglazed kitchen bowl fragments, fine ware sherds, glazed-unglazed loop handle fragments, glazed-unglazed ware (catalogue no. Ü29) and pottery lamp (6th-7th centuries) sherds, glazed, an unglazed lid (catalogue no. Ü28), numerous unglazed kiln materials, unglazed pipe fragments (Late Roman-Early Byzantine, 5th-7th centuries), marble fragments, a limited number of pottery sherds with mica slip (Byzantine?), Roman ware sherds (catalogue no. Ü22), Sgraffito pottery sherds, a bone needle and devices (catalogue no. Ü23) have been discovered.

A general evaluation of the field work and conclusions

An overall assessment of the excavated ruins and finds has been made in light of the information on the area provided by ancient sources, the research of historians,

and other studies. In the course of the work conducted in the BS/56-65 grid squares, the excavation of which we attempted to complete in the first phase, only the Ottoman architectural remains from the upper stratum has been unearthed completely. The lower strata have been accessed by test pitting at various points. Work within the test pitting commences below sea level; a depth of -7 metres has been accessed in the designated areas. Even at this level, there is material available from the dirt fill. However, water pumps remain insufficient after a depth of -7 metres and the water outlet is accelerated, so it has not been possible to resume working. Excavations have been ended at this level.

No architectural elements from the Byzantine period or before have been encountered in the test pittings conducted in the area. However, below approximately -4 metres, there is a plethora of Early Byzantine, Late Roman and Roman ceramic fragments. Among these, Early Byzantine pottery lamps (catalogue no. Ü24, Ü25) have been unearthed. The lead seal prints (pls. see p. 57) and coins in very good condition are worthy of note.

Again, during the work conducted in this area, a small ceramic sherd, which can be dated to 5th-4th century BC (DEF/60-62, a fragment of a terracotta fish plate from the 5th-4th century BC) suggest the presence of a settlement in the area during the Classical Period.

A multitude of Roman, Late Roman-Early Byzantine ware sherds discovered in the test pittings have been unearthed as a neat stratum between -5 and -7 metres. While the ceramics are in fragments, they can be restored. The condition of the wares allows us to classify them. By presenting a few examples here, the relations in Late Antiquity have been emphasized. Considered as Late Antiquity pottery, these wares are dated to the late 3rd-early 4th century at the earliest.³⁰ According to Hayes' classification, the finds are represented by form 3 and are referred to as Late Roman C pottery³¹. They bear resemblances to the plates common to 5th century ceramics and were used until the 6th century. Such ceramics denote the revival of opulence/abundance in the late 4th century. The pottery discovered in Scupi in recent years³², as well as the red-slip African pottery imported from North Africa, and the Phocaeen red-slip pottery imported from Anatolia reveal the widespread expansion of the Roman Empire. Here, the wide-rimmed plates in different styles (catalogue no. Ü27), the graceful decorations with various geometrical motifs and the flawless wares of this red-coloured pottery are generally among

³⁰ J. W. Hayes, *Late Roman Pottery*, London 1972; J. W. Hayes, "The Villa Dionysus Excavations, Knossos; The Pottery", *BSA* 78, London 1983, pp. 97-169; Marina Oncevska Todorovska, *Scupi's Late Antique Pottery* (Second half of IV-VI century), Kkonje 2004, p. 85.

³¹ J. W. Hayes, *Late Roman Pottery*, London 1972.

³² Marina Oncevska Todorovska, *Scupi's Late Antique Pottery* (Second half of IV-VI century), Kkonje 2004, p. 85.

the best kinds of wares of Late Antiquity. These ceramics indicate that a high-standard of urban life was experienced in Üsküdar in the late 4th-6th centuries.

Yet not all pottery discovered here is the consequence of such cross-cultural influences and commerce. There is also pottery ornamented with a stamp technique (impressed ware). The stamp technique was the most popular technique of ornamentation in the Roman Empire. Its origins lie in both Eastern and Western influences, and its origin cannot be completely identified. Although local manufacture of these wares is known to have taken place across Istanbul, there is no research to indicate whether the Üsküdar pottery was locally manufactured.

All these finds indicate that, in the light of information provided in ancient texts, this area was an in-

let before and as late as the 4th-7th centuries and continued to be used as an inlet in the 8th and 9th centuries (catalogue no. Ü29 and a lead seal from the 8th century [please see. p. 57]). This inlet was filled in and made available for housing development in the 16th and 18th centuries, and the development, which includes architectural elements, was completed. This has been confirmed with the work we conducted at DEF/60-62 squares, the details of which have been discovered during the sublevel access we presented in detail in the preceding pages (fig. 9). The discovery of a foundation raft set on piles (fig. 8) in this area clearly indicates that the ground was not solid enough in the previous centuries, but that it was created by the infilling of the sea.

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Preliminary paleoanthropological report on Istanbul / Üsküdar skeletons

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The systematic study of skeletons yields important information on numerous factors such as the lifestyles, cultures, paleo-economies, and quotidian activities of ancient societies. By combining this information with archaeological, geological, botanical, zoo-archaeological data, a number of features of a society, vanished or survived, are thus revealed.

The 97 human skeletons discovered in excavations carried out as part of the Marmaray project in Istanbul's Üsküdar county have been brought to the Anthropology Laboratory of Ankara University for paleo-anthropological study. In order to determine the demographic structure of Üsküdar society, gender and age have been assigned to each individual skeleton from criteria developed by the Workshop of European Anthropologists. Specifically, pelvic bones and the cranium have been used to determine gender.¹ For age estimation of adults, dental wear,² the proximal cross-sections of the clavícula,³ the femur and the humerus⁴, the symphyseal surface,⁵ the surfaces where the costa meets the sternum,⁶ and the epiphyseal coalescence of long bones⁷ have been examined. In this particular study, the skeletons have been divided into age groups of five-year intervals. Individuals whose age could not be determined are added to the "adult" category. This study comprises the paleodemographic analysis of the Üsküdar skeletons. Table 1 indicates the age and gender estimations of 97 individuals.

Table 1: Distribution and ratio of Üsküdar individuals based on gender

	N	%
Child	3	3,1
Female	14	14,4
Male	73	75,3
Unkown	7	7,2
Total	97	100

Table 2 indicates the distribution of individuals from Üsküdar society in five-year intervals of age. It is observed that 78.6% of women and 60.3% of men died in middle age. The number of females and males whose ages could not be estimated are 3 and 23, respectively. The individuals whose age could not be estimated are added to the 25-60+ age group. When individuals with age estimates are evaluated, the average age of death is

¹ W. M. Bass, *Human Osteology: A Laboratory and Field Manual* (3rd edition), Special Publication No. 2 of the Missouri Archaeological Society, Columbia 1987; D. H. Ubelaker, *Human Skeletal Remains: Excavation, Analysis, Interpretation* (2nd edition), *The Manuals on Archeology*, Taraxacum, Washington 1989; Roberts and Manchester, 1995; Roberts, C.; Manchester, K. 1995. *The Archaeology of Disease*, Ithaca, New York: Cornell University Press.

² D. R. Brothwell, *Digging Up Bones: Excavations, Treatment and Study of Human Skeletal Remains* (3rd edition), British Museum (Natural History) Oxford University Press, U.K. 1981; W. M. Bass, *Human Osteology: A Laboratory and Field Manual* (3rd edition), Special Publication No. 2 of the Missouri Archaeological Society, Columbia 1987; S. Hillson, *Dental Anthropology*, Cambridge University Press, U.K. 1996.

³ H. Kaur and I. Jit, "Age Estimation from Cortical Index of the Human Clavicle in Northwest Indians", *American Journal of Physical Anthropology*, issue 83, pp. 297-305, 1990.

⁴ J. Szilvassy and H. Kritscher, "Estimation of Chronological Age in Man Based on the Spongy Structure of Long Bones", *Anthrop. Anzeiger*, issue 48, 3, pp. 289-298, 1990.

⁵ Meindl, R.S. and C.O. Lovejoy, "Age changes in the pelvis: Implications for Paleodemography" in *Age Markers in the Human Skeleton*, M. Yaser İşcan, Ed. C.C. Thomas, Springfield, Illinois. pp.137-168. 1989; Meindl and Lovejoy, 1989; A. B. Kenneth, *A Field Guide for Human Skeletal Identification* (2nd edition), Springfield, Charles C. Thomas Publisher 1993.

⁶ W. M. Krogman and M. Y. İşcan, *The Human Skeleton in Forensic Medicine* (2nd edition), Springfield, Illinois, Charles C. Thomas Publisher 1986; S. R. Loth and M. Y. İşcan, "Morphological Assessment of Age in the Adult: The Thoracic Region" in *Age Markers in the Human Skeleton*, Springfield Charles C. Thomas Publisher 1989.

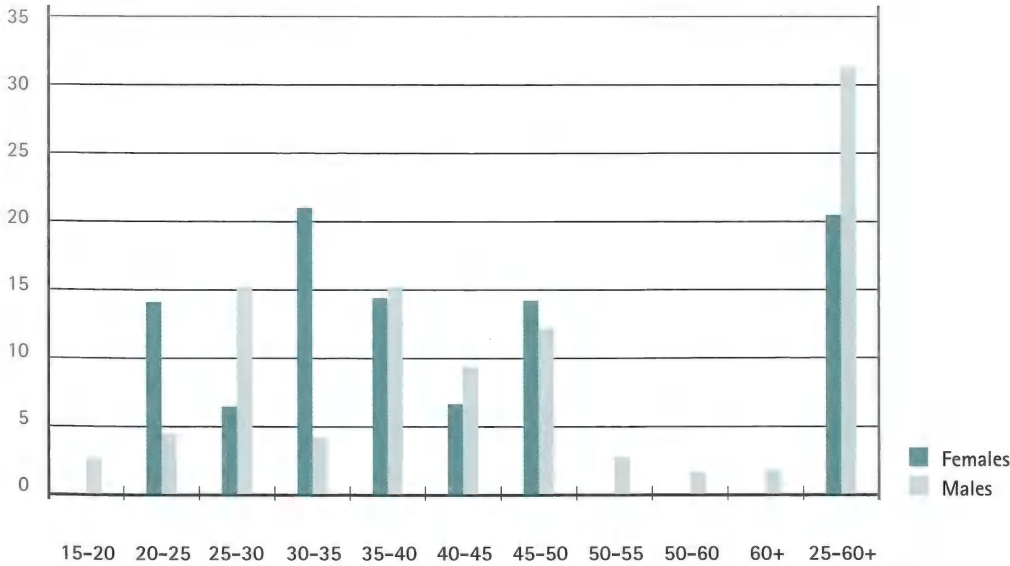
⁷ D. H. Ubelaker, "Human Skeletal Remains: Excavation, Analysis, Interpretation" (2nd edition), *The Manuals on Archeology*, Taraxacum, Washington 1989.

identified as 33.7 for females and 36.9 for males. Without gender discrimination, this ratio is 36.4 for the Van Karagündüz Medieval society (graph 1).

Table 2: Age intervals and age of death in Üsküdar society

	Child		Female		Male	
	N	%	N	%	N	%
0-5	1	33,3				
5-10	1	33,3				
10-15	1	33,3				
15-20					2	2,7
20-25			2	14,3	3	4,1
25-30			1	7,2	11	15,1
30-35			3	21,3	3	4,1
35-40			2	14,3	11	15,1
40-45			1	7,2	7	9,6
45-50			2	14,3	9	12,3
50-55					2	2,7
55-60					1	1,4
60-					1	1,4
25-60+			3	21,4	23	31,5
Total	3	99,9	14	100	73	100

Graph 1: Age interval and age of death for Üsküdar males and females



When we evaluate the ratio of the average age at death in ancient Anatolian societies without gender differentiation, we find that the Üsküdar individuals show similarities to the ancient Anatolian societies whose average age of death stood between the 30-40 age intervals. However, we can say that they are significantly different from the Roman Bath and Dilkaya societies. Üsküdar males are closer in this respect to Former Prison, Yortanlı and Iznik societies, but more distinct from the Panaztepe, Roman Bath and Dilkaya societies. Females, on the other hand, bear similarities to Former Prison, Iznik, Kallenderhane, Yortanlı and Panaztepe societies, but they remain distinct from their Roman Bath and Dilkaya counterparts (Table 3).

Following the preliminary paleopathological study conducted on the men and women of Üsküdar society, infectious diseases such as osteomyelitis, hematological diseases such as cribra orbitalia, as well as healed fractures in the forearm bones have been observed. The prominence of the linea aspera and deltoid tuberosity in male individuals and the deformations, particularly in the sternal ends of the clavicle, indicate that these people were exposed to harsh working conditions.

In future paleoanthropological studies to be conducted on Üsküdar society, the demographic structure of which has been identified, the heights of the individuals will be calculated and their morphological structures will be identified. The dental anthropological and paleoanthropological studies, on the other hand, will lead to conclusions about the society's eating habits and life style. The problems during growth and development stages will be identified and, therefore, the general health of this society will be revealed. Furthermore, mineral analyses on the bones will support the dental anthropological and paleoanthropological studies and define the paleo diet. The objective at the end of all these paleoanthropological studies is to access clear and qualitative information and to uncover the place of Üsküdar society among other ancient Anatolian societies.

Table 3: A comparison of the average age of death between Üsküdar society and ancient Anatolian societies

		Male		Female		General	
		N	%	N	%	N	%
Former Prison	Erdal, 2002	13	33,4	4	35,1	27	34,3
Iznik	Erdal, 1992	68	38,1	16	38,5	86	38,2
Değirmentepe	Özbek, 1985					27	34,4
Boğazköy	Wittwer, 1986					127	33,0
Topaklı	Güleç, 1987					87	32,8
Dilkaya	Özer, 1999	82	46,5	74	46,8	156	46,6
Yortanlı	Nalbantoğlu, 2000	38	37,3	39	38,4		
Tepecik	Sevim, 1993					443	41,3
Panaztepe	Güleç, 1989	2	42,5	26	35,5	47	8,6
Roman Bath	Alpagut, 2000	11	42,3	6	47,9	17	44,8
Üsküdar		73	36,9	14	33,7	97	36,4

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Ü

ÜSKÜDAR

Catalogue

Oinochoe

6th-century BC

Terracotta

h: 12.5 cm

diameter of rim: 9.4 cm

Üsküdar Square Cut-and-

Cover Station Rescue Dig

MRÜ 06/510

The oinochoe is of camel fabric, with a trefoil rim, and a narrow, high neck. The body bulges from the neck down. It has a vertical handle that begins at the rim and connects to the body. The rim is painted brown. At the point where the neck ends, there is a slim brown band and, below it, a motif of adjoining semi-circles in brown. Two wide brown bands with a small space between are seen on the abdomen. Portions of the rim, neck and body, as well as the entire base are broken and missing. It is similar to Clazomenae, Teos, and Bayraklı ceramics.

ŞK



6th-5th century BC

Terracotta

h: 9.2 cm,

diameter of rim: 15.4 cm,

diameter of base: 6.2 cm

Üsküdar Square Cut-and-Cover Station Rescue Dig

MRÜ 06/509

There are broken and missing pieces on the rim. The ring handles of this semi-globular vessel are horizontal; the base also features a ring pedestal. The *kylix* is of light brick fabric. Both the interior and the exterior are painted brown. The painted sections are comprised of thin and thick concentric bands that correspond to the form of the vessel. It was discovered during a test pitting and belongs to the early periods of the ancient city of Chrysopolis. Similar examples are encountered in Ionia and the Western Black Sea region.

Karagöz 2006, fig. 15 (left).

ŞK



Ü3

Hydria fragment

6th–5th century BC

Terracotta

h: 19.4 cm, diameter

of base: 12 cm

Üsküdar Square Cut-and-

Cover Station Rescue Dig

MRÜ 06/571

The fragment is of light brick fabric with a camel-coloured slip. The wide body narrows toward the base. The pedestal is high and broad. The body is decorated with four bands; three wide and one narrow. The section where the body connects with the pedestal is painted brown and features a brown band. The fragment is broken and has been repaired. A large portion of the body and rim are broken and missing. The characteristics are similar to the ceramics of Clazomenae and Teos.

ŞK



Ü4

Kylix

6th century BC

Terracotta

h: 9 cm, diameter of

rim: 16 cm

Üsküdar Square Cut-and-

Cover Station Rescue Dig

MRÜ 06/573

The *kylix* is of camel fabric and slip and is coated with black paint. It has a wide rim and a bulging body. The body narrows at a sharp angle toward the high pedestal. One of the two symmetrical horizontal handles is broken and missing. The exterior, the rim, a portion of the body, and the entire pedestal and handle are coated with black paint. The broken parts of the *kylix* have been repaired. A portion of the rim and body are broken and missing. The workmanship is South Ionian.

ŞK



Ü5

**Stele fragment –
central acroterium**

5th century BC

Terracotta

l: 38 cm, w: 5 cm

Üsküdar Square Cut-and-

Cover Station Rescue Dig

MRÜ 06/652

07.14 T

This Ionic-style stele fragment is a broken part of the central acroterium and pediment of a high acroterium. The triangular pediment and the light moulding details below the pediment are applied as a low relief band. The fragment is possibly from the necropolis of the ancient city of Chrysopolis.

ŞK



Ü6

Pottery lamp

5th century BC

Terracotta

h: 3.5 cm, l: 9.5 cm,

w: 6.5 cm

Üsküdar Square Cut-and-

Cover Station Rescue Dig

MRÜ 06/565

07.66 PT

The pottery lamp is of brick fabric with black paint. There is a filler hole at the centre of the circular discus. The body narrows from the shoulder to the base at a sharp angle. It has a low base. The handle is broken and missing. Pieces are broken off at various points.

ŞK



Ü7

Kantharos

Early Hellenistic

4th century BC

Terracotta

h: 10.3 cm, diameter of

rim: 9 cm, diameter of

base: 4.6 cm

Üsküdar Square Cut-and-

Cover Station Rescue Dig

MRÜ 06/505

The *kantharos* is of dark brick fabric and is coated with black paint. It features a slightly flaring rim and a high neck. The body bulges from the neck towards the abdomen and narrows towards the base. The neck is ornamented with stylized red ivy motifs. The everted pedestal is connected to the body with a ring. A large portion of the two symmetrical handles that connect to the body is broken and missing. Defined with deep contours, mock-metal, linguiform petals expand from the base towards the shoulder, creating a slight camber. A portion of the neck and body is missing. The *kantharos* is worn out. Its features are similar to Western Slope (Western Anatolian) ceramics.

Karagöz 2006, fig. 15 (right).

ŞK



Ü8

Bowl

Early Hellenistic

4th century BC

Terracotta

h: 7.9 cm,

diameter of rim: 12.4 cm,

diameter of base: 6 cm

Üsküdar Square Cut-and-

Cover Station Rescue Dig

MRÜ 06/523

The bowl is of camel fabric with a brown slip. Traces of red paint are visible toward the base. It has a wide rim. The bulged body narrows from the rim toward the base. The body features two rows of stylized notch decorations with grooves between them. A portion of the rim and body is broken and missing. It is a prototype of the Megaran bowls typical of the advanced Hellenistic Period.

ŞK



Ü9

Phiale

Early Hellenistic
4th century BC
Terracotta
h: 8.2 cm, diameter of rim:
17 cm
Üsküdar Square Cut-and-
Cover Station Rescue Dig
MRÜ 06/568

The phiale is of dark camel fabric and slip. It has a wide rim. The body narrows towards the base at a sharp angle from the shoulder. The broken parts have been repaired. A portion of the rim and body are broken and missing.

ŞK



Ü10

Pottery lamp

Roman, 3rd century AD
Terracotta
h: 5 cm, l: 8 cm, w: 6.2 cm
Üsküdar Square Cut-and-
Cover Station Rescue Dig
MRÜ 06/552
07.62 PT

The pottery lamp is of camel fabric and is coated with a brown slip. The circular discus and relief are surrounded by two grooves. A *kantharos* motif carved in relief decorates the centre of the discus. The filler hole is to the left of this motif. The body narrows from the shoulder to the base at a sharp angle. The circular base is bordered by two concentric grooves. The handle is looped. There are missing bits from the shoulder and wick hole. The lamp is intact.

ŞK



**Kybele votive statuette
with inscription**

Roman, 2nd century AD

Terracotta

l: 29.6 cm, w: 16.3 cm

Üsküdar Square Cut-and-Cover Station Rescue Dig

MRÜ 06/474

07.5 T

This is a statuette of the Mother Goddess Kybele with a lion on her lap. The skirts of the goddess's himation drape over a cubic pedestal; the statuette with the inscription tablet forms a monobloc. The front of the pedestal carries an inscription of nine lines. (For detailed information, please see p. 39)

ŞK



Graveyard stele fragment

Roman, 1st-2nd century AD

Terracotta

l: 34 cm, w: 20 cm

Üsküdar Square Cut-and-

Cover Station Rescue Dig

MRÜ 06/448

07.2 T

The right half, as well as the entire lower portion of the stele fragment is missing. Inside the framed scene, there is a woman dressed in chiton and himation, seated on a backless stool, depicted in three-quarter profile. Across from her is the small figure of a servant. The servant extends a jewelry box to her mistress. The flat, triangular pediment without profile on the exterior bears a two-line inscription: "HCACA" above and "ΦΛΑΒΙΟ" below. Similar examples are found in the necropolises of ancient Byzantium and Chalcedon.

Karagöz 2006, fig. 7 (left).

ŞK



Ü13

Pottery lamp

Early Byzantine, 5th
century

Terracotta

h: 4.2 cm, l: 11.8 cm,

w: 6.8 cm

Üsküdar Square Cut-and-
Cover Station Rescue Dig

MRÜ 06/632

The lamp is of light brick fabric and a gray slip. The discus is surrounded by a groove carved in relief. The monogrammed Crucifix on the discus is carved in relief and is flanked by two symmetrical filler holes. The body narrows from the shoulder to the base at a sharp angle. The shoulder is decorated with geometric motifs created by concentric grooves in relief. The handle is lobed. One of the two filler holes is partly broken and missing.

ŞK







Ü14

Pottery lamp

Byzantine, 6th-7th century

Terracotta

h: 5.8 cm, l: 11 cm,

w: 6.8 cm

Üsküdar Square Cut-and-

Cover Station Rescue Dig

MRÜ 06/462

07.36 PT

The pottery lamp is of light camel fabric and slip. The discus has a filler hole surrounded by two concentric grooves. There are "S" motifs in relief on the shoulder. The body narrows towards the base at a sharp angle from the shoulder. The handle is perpendicular to the body and is ornamented with a human face in relief (*helios?*). The handle is shaped like a ray. The wick hole is broken and missing.

Karagöz 2006, fig. 13 (left).

ŞK



Ü15

Pottery lamp

Byzantine, 6th-7th century

Terracotta

h: 5 cm, l: 10 cm,

w: 6.1 cm

Üsküdar Square Cut-and-

Cover Station Rescue Dig

MRÜ 06/458

07.34 PT

The lamp is of brick fabric and slip. The discus is round. The shoulder features concentric circular motifs in relief. The handle is perpendicular to the body with a stylized human face in relief. The object has been repaired. A large portion of the body, base and the wick hole is broken and missing.

Karagöz 2006, fig. 13 (left).

ŞK



Ü16

Bowl

Byzantine, 11th-12th century

Terracotta

h: 6.2 cm, diameter of base: 5 cm, diameter of rim: 10 cm

Üsküdar Square Cut-and-Cover Station Rescue Dig
MRÜ 06/371

The bowl is of light brick fabric. The interior is coated with dark yellow glaze. Near the rim, there are three rows of rings painted in brown with two rows of brown ring motifs in the middle. On the exterior, the rim and a portion of the body are coated in yellow glaze and white paint. The remainder of the body and the pedestal are the color of its fabric.

ŞK



Ü17

Base sherd with decoration

Byzantine, 13th century

Terracotta

h: 2.3 cm, diameter of base: 11.5 cm

Üsküdar Square Cut-and-Cover Station Rescue Dig
MRÜ 06/423

The sherd of light gray fabric is coated with green glaze. It features an eagle motif carved in incised sgraffito technique.

ŞK



Ü18

**Base sherd with
decoration**

Byzantine, 14th century

Terracotta

h: 5.2 cm, diameter of

base: 10 cm

Üsküdar Square Cut-and-

Cover Station Rescue Dig

MRÜ 06/440

The fragment is of light brick
fabric, and it is coated with gre-
en glaze. It features a stylized
ship motif carved in incised
sgraffito technique.

ŞK



Ü19

Censer

Byzantine, 11th-13th
century

Bronze

h: 7.2 cm, diameter of

rim: 7.8 cm, diameter of

base: 4 cm

Üsküdar Square Cut-and-

Cover Station Rescue Dig

MRÜ 06/380

07.19 M

The censer is heavily corroded. It
has a wide rim that narrows to-
wards the base with a bulge in
the body. It is set on a slightly
high base. On the rim, there are
three chain holes to suspend the
censer.

Karagöz 2006, fig. 14 (left).

ŞK



Ü20

Crucifix

Byzantine, 11th-13th century

Bronze

l: 6.4 cm, w: 2.5 cm

Üsküdar Square Cut-and-Cover Station Rescue Dig

MRÜ 06/381

07.20 M

The crucifix has a simple form and features a chain hole in the upper section to suspend the crucifix. Both sides of the crucifix are ornamented with incised figures. The crucifixion of Jesus Christ is depicted on one side, while the other side depicts the Virgin Mary.

ŞK



Ü21

Base sherd

Classical period, last

quarter of 5th century BC

Terracotta

h: 2 cm, l: 7.6 cm, w: 4.4 cm

2004-2005 Üsküdar

Marmaray Excavation,

L/9-11, -1 m/-2 m

05.127 ÇÇ (MRÜ/353)

The base sherd is of brick fabric. With the exception of the base, the interior and the exterior are coated with black glaze. The interior of the fragment features impressed, stylized plant motifs –a characteristic of the period.

The Athenian Agora, v. XII, reg. 1, New Jersey p. 270 (504); reg. 2 (pl. 51/504).

ŞK



Ü22

Bowl fragment

Roman, 1st-3rd century

Terracotta

h: 5.5 cm, l: 20 cm

2004-2005 Üsküdar

Marmaray Excavation,

I/65, -6 m/-7 m

05.118 ÇÇ (MRÜ 05/332)

The bowl fragment is of gray fabric with a brick slip, and it is burnished. It has a wide and slightly everted rim and a broad-bodied spine. The base has an elongated and everted ring foot base. The interior of the bowl is flat; the interior features slight hue variations (tinting) in bands. The exterior, the rim and the areas near the base are ornamented with parallel grooves. On the exterior rim, brick red and salmon-coloured tinting is visible. The lower sections are tinted with a light brown band.

J. W. Hayes, "Four Early Roman Groups from Knossos", *BSA*, issue 66, 1971, p. 249 *ibid.*, p. 258, fig. 9/18.

ŞK



Ü23

Pin and awl, and bone handles

a) Pin

Roman, 2nd-4th century
Bone; h: 15.6 cm, diam. 1 cm
2004-2005 Üsküdar
Marmaray Excavation,
I/65, -5.1 m
05.70 M (MRÜ 05/258)

It is brown and burnished. The knob has three grooves, including a large one in the centre. The pin narrows and becomes pointed towards the end. The top portion is missing.

E. B. Dusenbery, *Samothrace 11, The Nekropoleis Catalogues of Objects by Categories*, Princeton 1988, p. 1014 (S219-9).

b) Awl

Roman, 2nd-4th century
Bone
h: 7.7 cm, diam. 0.75 cm
2004-2005 Üsküdar
Marmaray Excavation,
GH/58-59, -1 m/ -2 m
05.57 M (MRÜ 04/180)

The body is ornamented with incised, parallel grooves. The end is broken and missing.

Corinth XII, p. 285 (2340-2341, plate 119/2340-2341). In IJK/62-63 test pittings, Area 13, -5m/-6m (MRÜ 04/118, museum inv. no. 05.52 M, similar: *Corinth XII*, p. 178, no. 1276-1277, plate: a handle found in 79/1276-1277 (Roman 2nd-4th century) and GH/58-59, -2 m (MRÜ 04/175, museum inv. no. 05.52 M, similar: Harrison, R. M., 1986, *Saraçhane*, v. I, pp. 256/443, fig. 363 (443); Davidson, G. R., *Corinth XII*, pp. 175, 178, no. 1276-1277, pl. 79 (1276-1277; Dusenbery, E. B., 1988, *Samothrace 1*, a bone tool found in p. 1013 (S158-11) (Roman 1st-3rd century) are included among Roman-period finds.

ŞK



Ü24

Pottery lamp

Early Byzantine
Second half of the 6th century
Terracotta
h: 3.8 cm, l: 10 cm,
w: 6.2 cm, diskus diameter: 5 cm
2004-2005 Üsküdar
Marmaray Excavation,
K/56, -4.70 m
05.30 PT (MRÜ 04/01)

Of the Saraçhane Type 8 lamps, this slightly depressed, flat-based pottery lamp has an asymmetrical body. Set on two pedestals, around the filler hole on the circular discus is the depiction of an awning decorated with semi-circular dots in relief.

Hayes, J. W., *Saraçhane*, v. II, pp. 85-86/34-44, pl. 20 (34-44) 1992.

ŞK



Ü25

Pottery lamp

Byzantine

Late 6th century-7th century

Terracotta

h: 3.7 - 6.1, l: 9.5 cm,

w: 6.5 cm, diskus diameter:

4.2 cm

2004-2005 Üsküdar

Marmaray Excavation,

I/65, -6.00 m

05.51 PT (MRÜ 05/269)

The knob is shaped like a human head. It belongs to the Saraçhanne Type 11 lamps. Two other similar pottery lamps have been discovered in the same test pitting. On one of these, the forehead of the figure is ornamented with a crucifix.

Hayes, J. W., 1992, v. II, p. 86, Type 1/65, pl. 21/65.

ŞK



Ü26

Ampulla

Late Roman-Early Byzantine

5th-7th century

Terracotta

h: 15.3 cm, diameter of

body: 4.2 cm, diameter of

base: 1.5 cm

2004-2005 Üsküdar

Marmaray Excavation

K/56, -4.70 m

05.68 PT (MRÜ 04/02)

The ampulla is of red brick fabric, with a pinkish slip. The upper portion is painted brown. This particular example was discovered at the same level and area as the pottery lamp with inventory number 05.30. (Test pitting I/65,-6 m-7 m, inv. no. 05.119 PT). A nearly intact ampulla of dark brick-red fabric, pinkish-beige slip with dark and red-brown wave paint, as well as a number of other monogrammed base sherds have also been discovered in the same area.

Hayes, J. W. 1971, *BSA*, 66 (1971), pp. 243-248, pl. 36-37; Hayes 1992, v. II, pp. 8-9, fig. 1.21-24, fig. 2; pl. 14-15.

ŞK





Ü27

Bowl fragments

Late Roman
 Late 4th century-7th century
 Terracotta
 h: 7.5 cm, l: 19.8 cm
 2004-2005 Üsküdar
 Marmaray Excavation,
 I/65, -5.00m /-6.00 m
 05.115 ÇÇ (MRÜ 05/324)

The fragments of a brick fabric with small stones and the same color slip. There is a difference in hue between the exterior and the interior. The flaring and everted ring-like rim are wide at the top. The slightly bugling body is wide, narrowing toward the base. The ring base is elongated. The interior of the bowl features two concentric circular motifs at its centre. It is part of the "African Red Slip Bowls" series.

Hayes 1968, DOP 22 (1968), p. 208 (50), p. 209 (E/50); Hayes 1992, v. II, p. 5, p. 6 (fig. 1/16) and p. 212 (16); From the same grid square and level, a fragment from the "Cyprus red slip and roulette-motif bowls" MRÜ 05/321 museum inv. no. 05.113 ÇÇ (Hayes 1968, DOP 22 [1968], p. 211 [72], p. 210; F/72) and numerous fragments from "African Red Slip Bowls" series; MRÜ 05/320 museum inv. no. 05.112 ÇÇ (Hayes, J. W., 1972, pp. 405-407, fig. 91b); MRÜ 05/323, museum inv. no. 05.114 ÇÇ (Hayes 1968, DOP 22 [1968], p. 211 (72), p. 210 (F/72); Hayes, J. W., 1972, p. 405-407, fig. 91a; Todorovska, M. O., 2004, p. 98 (89), pl 15/89 have been discovered.

ŞK



Ü28

Lid

Late Roman - Early
 Byzantine
 4th-7th century
 Terracotta
 h: 5 cm, diameter: 19.3 cm
 2004-2005 Üsküdar
 Marmaray Excavation,
 I/65, -6 m -7 m
 05.123 ÇÇ (MRÜ 05/341)

The lid is of a brownish-beige, fabric with stone temper and speckled slip, in the same color as the fabric. The exterior has glaze drops at different points. The flaring rim ring is moulded. The knob is in the concave centre of the lid. The base of the knob is flat on the interior. The lid is broken and the missing pieces have been filled in with gypsum plaster.

Hayes, 1968, DOP 22 (1968), p. 206 (31), p. 207 (D/31); Hayes 1992, v. II, p. 105 (Dep. 31 fig. 50/7-8) and p. 170 (fig. 50/7-8) and p. 160 (fig. 39/31).

ŞK



Ü29

Pot (jar)

Late Roman-Early
Byzantine,
Late 6th century
Terracotta
h: 8.5 cm, diameter of
rim: 6.4 cm, diameter of
body: 7.4 cm,
diameter of base: 3.4 cm
2004-2005 Üsküdar
Marmaray Excavation,
I/65, -6.20 m.
05.102 ÇÇ MRÜ 05/288

The jar is of a stony, beige fabric and a cream slip; it is burnished. The bulging body has a wide, flaring simple rim and narrows toward the base at a sharp angle. It has a tall foot and a flat base. It is intact; the slip on the exterior has worn off in certain areas; small pieces are torn off at various points.

Hayes 1992, *Saracane*, v. II, p. 99
(Deposit 25/4), p.157, fig. 36/25(4).

ŞK

Ü30

Pedestal bowl or pottery lamp

Byzantine
8th-9th century
Terracotta
h: 6 cm, diameter of
rim: 8 cm, diameter of
pedestal: 5.7 cm
2004-2005 Üsküdar
Marmaray Excavation,
RS/60-61, -2.30 m/-2.80 m
05.75 ÇÇ (MRÜ 04.42)

This bowl/pottery lamp is of pinkish beige fabric. The exterior is coated with the same coloured slip. The conic body has a wide, flaring simple rim, and narrows toward the base. It has an outward flaring conic pedestal. The exterior is eroded. In an attempt to reconstruct the bowl, the missing parts have been replaced with gypsum plaster.

Hayes, 1992, *Saracane*, v. II, p.
216, fig. 9/22.

ŞK



Ü31

Pots (3)

Byzantine-Ottoman
Terracotta

a) Large: 5.23 ÇNK,
h: 6.8 cm, diameter of
body: 5.8 cm

b) Medium 5.22 ÇNK,
h: 5.2 cm, diameter of
body: 5.2 cm

c) Small 5.21 ÇNK,
h: 3.2 cm, diameter of
body: 3.4 cm

2004-2005 Üsküdar
Marmaray Excavation,
R/60 -1.90 m
MRÜ 04/16-14 (from large
to small)

a) This pot is of dark camel and
brick fabric. A large portion of the
exterior and interior are coated
with glaze. These bowls have trian-
gular rims and deep bodies that
narrow toward the base. They are
broken in various places and have
been reconstructed with gypsum
plaster. The surface has deep frac-
tures and metal (?) remains can be
seen in the interior.

b) It is of brick fabric but, becau-
se it has been burned, the body
has taken on a dark gray colour.
There is a fine trace of glaze on
both the interior and the exteri-
or. It has a triangular rim, a deep
body that narrows toward the
base and a circular base. It is bro-
ken and has been restored with
gypsum plaster. Metal remains
can be seen in the interior.

c) It is of a dark camel-coloured
fabric. The interior and exterior
are coated with green and
brown glaze. It has a triangular
rim and a deep body that nar-
rows toward the circular base. A
fracture extends from the rim to
the base.

Charles. H. Morgan II, 1942, *Corinth*
v. XI, p. 25, fig. 17/b-e. Similar pots
were discovered in a pottery work-
shop during excavations at Corinth.
Similar to the Üsküdar finds, these
pots contain iron or bronze corrosi-
on in the interior. It is argued that
these pots were used in mixing pa-
ints to be added to the lead glaze
used in the final burnishing of the
pots.

ŞK



Ü32

Tripods

Byzantine-Ottoman?
Terracotta
Dimensions vary between
h: 2.8 cm, l: 13 cm and
h: 1.8 cm, l: 4.5 cm
2004-2005 Üsküdar
Marmaray Excavation,
IJ/62, -1.60/-2 m
05.80- 05.84 ÇÇ
(MRÜ 04/80)

The five tripods are of light brick,
pinkish or light beige fabric. The
surfaces have slips and the pod
ends are coated with glaze in
different areas.

Corinth v. XII, pp. 22-23, fig. 17, H,
I, N-O.

ŞK



Ü33

Small Bowl

Late Byzantine,
12th-13th century
Terracotta

h: 4.7, diameter of rim: 8.9
cm, diameter of base: 4.1 cm
2004-2005 Üsküdar
Marmaray Excavation,
F/62 Space 10,
-0.80 m/1.50 m
05.78 ÇÇ (MRÜ 04/61)

The bowl is of dark brick fabric
with mica and stone temper. The
exterior and the interior are coa-
ted with olive-green glaze. The
bowl is very fine and well-fired.
The interior and exterior are gla-
zed. There is an incised graffito
on the exterior base.

Hayes 1992, v. II, p. 47.

ŞK



Ü34

Pedestal fruit bowl

Late Byzantine, Early
Ottoman
13th-14th century
Terracotta

h: 10.5 cm, diameter of
rim: 23.2 cm, diameter of
base: 10.3 cm
2004-2005 Üsküdar
Marmaray Excavation,
EF/60-62 Region 11,
-0.80 m/-1.50 m
05.79 ÇÇ (MRÜ 04/68)

The bowl is of pinkish-beige fabric
with mica and stone temper. It is
coated with alternating light and
dark green, as well as yellowish-
beige glaze. The exterior is coated
with green glaze, which extends
towards a portion of the pedestal.
This painted, sgraffito bowl's inter-
ior features a band with three
groves surrounding two incised
concentric circles. The band also
features an "S" figure and linear
decorations applied in the same
technique. The tripod marks at the
centre are distinct.

Corinth, v. XI, "The Byzantine
Pottery", p. 142, fig. 117b.

ŞK



Ü35

Deep dish

Ottoman,
15th-16th century
Terracotta
h: 4.3 cm, diameter of
rim: 18 cm, diameter of
base: 5.1 cm
2004-2005 Üsküdar
Marmaray Excavation,
RS/60-61, -1.00 m/-2.50 m
05.45 ÇNK (MRÜ 04.25)

The dish is of brick fabric with a slip of the same colour on the exterior. The interior and the rim are coated with cream and green glaze. It has a flaring rim, a spine over the body, a shallow body and a small ring base. The interior is ornamented with a circular motif and the rim is decorated with four painted ring motifs. The tripod marks at the centre are distinct

Hayes 1992, v. II, p. 284 b 27/5
(83.25), pl. 47.

ŞK



Ü36

Deep bowl

Late Ottoman,
15th-17th century

Terracotta

h: 12.2 cm, diameter of
rim: 26.5 cm, diameter of
base: 8.4 cm

2004-2005 Üsküdar

Marmaray Excavation,

JK/60- Region 1,

-1.10 m/-1.85 m

ÇNK (MRÜ 04/30)

The bowl is of dark pink fabric with mica and stone temper. The exterior has a pinkish beige slip, and the interior is coated with dark green glaze. The glaze has spilled over the rim at various points. The interior is ornamented with motifs carved in low relief that extend from the rim to the base, which bears the mark of a tripod.

Similar examples: Hayes 1992, v. II, p. 280, et al., p. 352/fig. 110/ b 8.3, 73.45.

ŞK



Ü37

Pedestal bowl

Late Ottoman

17th century

Terracotta

h: 11.8 cm, diameter of
rim: 17.0 cm, diameter of
base: 7.8 cm

2004-2005 Üsküdar

Marmaray Excavation,

L/49 -1.40 m

05.43 ÇNK (MRÜ 05/346)

The bowl is of dark pink fabric with added mica and stone temper. The exterior has a pinkish-beige slip, and the interior has a brick-coloured slip on the rim and a light brick-coloured slip at the centre. The interior paint spills over to the exterior surface in various places.

Hayes 1992, v. II, p. 319 et al., Dep. (5); fig 103(b 32.7, 32.13)-Pl. 45/o.

ŞK



Ü38

Weight, 12.5 Dirhem

Ottoman, H [1]263,
Abdülmeccid Period
(AH1255-77/ 1839-61 AD)
Bronze
Diameter: 6.1 cm,
Thickness: 0.3 cm
2004-2005 Üsküdar
Marmaray Excavation,
GH/64-65, -1.00 m/ -2.00 m
05.69 M (MRÜ 04/230)

The weight has a ring form. There are six marks on the exterior. One of these is a "tuğra", or the Sultans signature. At RS/62, -1 m/-2 m, a bronze 25 *dirhem* dated AH [12]29, Mahmud II, AH. 1223-1255/1808-1839 AD with inventory number MRÜ 05/354 (museum inv. no. 05.74 M) has also been discovered.

Kürkman, 2003, pp. 262/233-236;
Kürkman, 2003, p. 261/229; Kürkman, 1991, p. 50. Cat. 83.

ŞK



Ü39

Tablet with inscription

Ottoman
Bronze
l: 7.2 cm, w: 5.2 cm,
t: 0.2 cm
2004-2005 Üsküdar
Marmaray Excavation,
K/24, -1.74 m
05.73 M (MRÜ 05/351)

This oviform, flat tablet carries a three-line inscription in Ottoman Turkish. The inscription reads, "Üsküdar Grand Pier Porters Chamber of Craftsmen Number 29". This tablet is of particular significance, since it indicates the presence of a Chamber of Craftsmen in the area.

ŞK



S

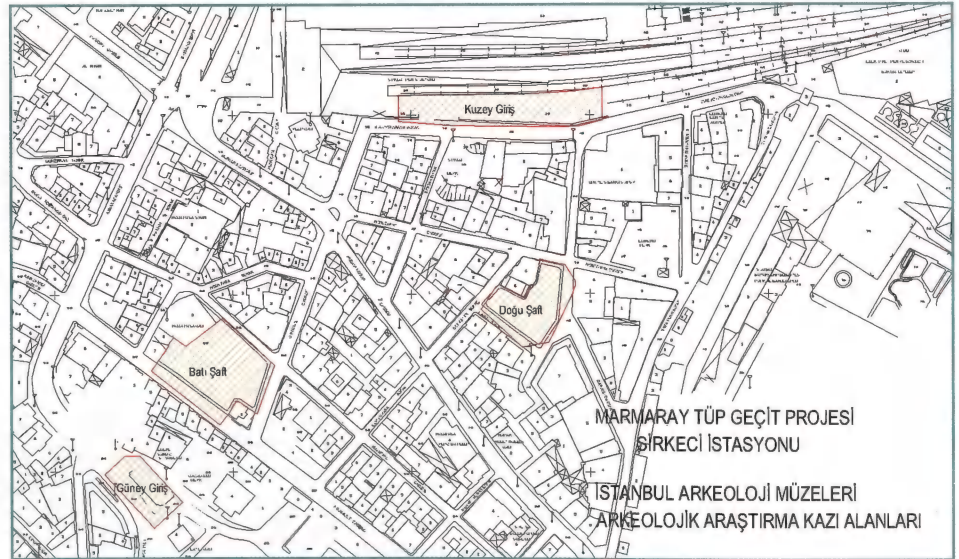
SİRKECİ

Results of the excavations conducted in Sirkeci

Çiğdem Girgin*

The Sirkeci station excavations conducted as part of the Ministry of Transportation's Istanbul Strait Tube-tunnel Transit Project (Marmaray) are still in progress with the participation of independent archaeologists Nurcan Çalik, Nilgün Örnek, Burçe Tüz, Enis Tartan, Oğuz Erkan, Betül Başak, Ahmet Özcan, Evrim Erdoğan, Tolga Öztan, Hüseyin Yıldırım, Ece Keskin, Erkan Kabil, architects Fakir Cavlun, Kübra Gür, Emre Torbaoğlu, Seçkin Bilgin, and photographer Ali Osman Özmen.

Excavations in four separate areas are required for the tunnel station of Sirkeci. The station entrances are located on the south (northern entrance) of the Sirkeci Train Station and on the Cağaloğlu Ankara Street (southern entrance). Ventilation shafts, on the other hand, are positioned next to Hoca Paşa Mosque (western shaft) and behind the Sirkeci Train Station (eastern shaft) (fig.1). An evaluation of the geological test pittings were conducted in all four areas. It was observed that the culture fill extends from 5.45 metres to -13.15 metres at the northern entrance, between 21.80-9.45 metres at the southern entrance and 15.53-3.93 metres at the western shaft, and between 7.50 metres to -5.49 metres at the eastern shaft. Due to the importance of the archaeological digs, the status of ground and subterranean water, development in the area, scarcity of space, and issues regarding environmental protection, it has been decided that the excavation areas should be surrounded by protective sheeting prior to excavations.



* Archaeologist.

Northern entrance (interior of the Sirkeci train station)

Our work in this area is currently comprised of three test pittings to determine stratification. Our excavation area coincided with the outermost railroad tracks of the commuter line and the area below the last platform. In the course of our work, the Sirkeci Station and the still-intact platform comprised the northern border, whereas the enclosure wall constituted the southern border of the test pitting (fig. 2).

In the excavations, at the upper level, Ottoman Period – with its internal phases – and, beneath transition fill, Byzantine-Period architectural strata have been identified. However, due to ground water and the danger posed by an active railway line, work on the Byzantine stratum has been stopped. The security sheeting system required to resume excavation across the area has not yet been completed, so work in this area cannot be continued.

Due to the small size of the test pittings, it has not been possible to observe architectural integrity. Finds from the multi-phased Ottoman Period must be dated between 1453 and 1888. The cadastral map section from 1881 reveals that the Elvan-Zâde Masjîd Quarter¹, founded during the reign of Sultan Mehmed II was present

until the station's construction. The lines marked on this map indicate that the track in the south overlaps the enclosure wall of the present station. The line in question designates the projected border of the station prior to construction. It appears that the quarter was demolished during the construction of the new station. Following the groundbreaking ceremony on 11 February, 1888, the construction of the Sirkeci Train Station was completed on 3 May, 1890 and was opened for service by Müşir Hamdi Paşa on behalf of Sultan Abdülhamid II.²

The analyses of the pottery discovered in the Byzantine fill reveals that ceramic production was carried on in this area. Tripods, unglazed ceramic fragments that have been coated and fired, coated or glazed fragments from workshop remains attached to tripods, ceramic clinkers, as well as marble mortars and pestles have been discovered in large quantities. Furthermore, a round structure identified during one of the test pittings but not yet completely excavated is thought to be a kiln. There is a dome-like curve on one section of the unearthed round structure although the dome is missing (fig. 3). Preliminary studies lead us to believe that the workshop was used in the 13th – 14th centuries.

¹ E. H. Ayverdi, *Fatih Devri Sonlarında İstanbul Mahalleleri, Şehrin İskânı ve Nüfusu*, Ankara, 1958, p. 19.

² M. Arch. Meryem Müezzen Findıkgil Doğuoğlu, *19. yüzyıl İstanbul'unda Alman Mimari Etkinliği*, Istanbul Technical University, Institute of Sciences, unpublished PhD thesis, 2002.



Southern entrance (Cağaloğlu)

Along the southern spans of the area, a roughly half-moon shaped wall made with irregular stones and mortar of coarse workmanship has been identified. In the interior of the circular wall, the intersecting and disorderly partition walls connected to the half-moon exterior wall, create quadrilateral, polygonal and triangular spaces. The foundations of this masonry structure, which is identified to have had more than one phase, were also used in the 20th century (fig. 4).

The area where the 20th-century Valide Mosque – still open for worship – is located and the surrounding areas of the Nallı Masjid Quarter³ from Sultan Mehmed II's period changed significantly after the 17th century with the formation of Babiâli and in the 19th century, a new settlement plan was developed. There are similarities between the maps from this century and current maps. It can be seen that the discovered architectural remains constitute the north end of plot 278, identified in the 1904 cadastral map section as a warehouse and a dwelling. With the change in the zoning plan designed for the expansion of Ankara Stre-

et in the recent past, the present plot has been reduced in size as can be seen in the current cadastral map section.

Furthermore, in the digs carried out to move the concrete rainwater channel in the southern portion of the area, a continuation of the 20th century remains have been discovered.

Apart from these ruins, a floor fragment from the Ottoman period has been identified. Located in the southeast corner of the excavation area, this fragment made of terracotta bricks is intersected by 20th century walls and is accessed by a staircase. The side wall, which is connected to the staircase and carries remains of cistern plaster on its interior, and the walls behind it are arched and are located within the south and east cross-sections. The floor is covered with square bricks (fig. 5).

To the east of this structure, uneven wall fragments made with stone, brick and mortar have been discovered. The wall fragments yield no specific plan. It is thought that these stone walls are pieces from Ottoman-Period buildings that were constructed using existing Byzantine ruins. In the excavations that were carried out in the west of the walls, two adjacent (sharing a partition wall), Late Byzantine

³ E. H. Ayverdi, *Fatih Devri Sonlarında İstanbul Mahalleleri, Şehrin İskânı ve Nüfusu*, Ankara, 1958, p. 41.



structures with vaulted bricks have been identified. The thick plaster inside the structures suggests that they were used as water reservoirs. Stone covered staircases have been discovered on the eastern side of these structures (fig. 6).

At this stage of the excavations, interruptions caused by the incline of the area, the buildings in the immediate surroundings, and the traffic congestion on Ankara Street posed a serious threat. The work was halted to make a static assessment of the situation and to implement a shoring project. Due to the lack of security measures and delay in the implementation of the shoring project, excavations are currently on hold.

Eastern shaft (south of Sirkeci train station)

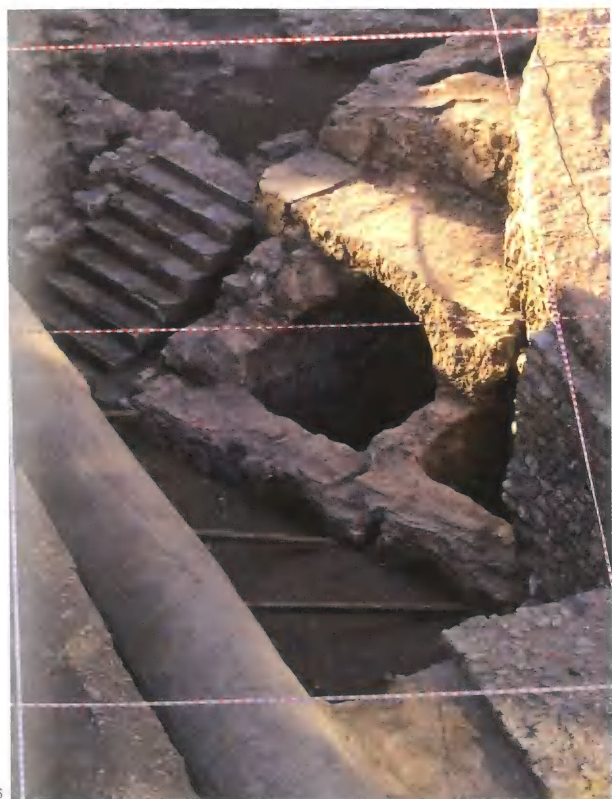
Prior to the archaeological excavations, security sheeting was applied in the 10.58 metre-diameter exit shaft and the oval, 24.56 x 28.34 metre-diameter ventilation shaft.

Due to safety risks from heavy machinery in the production of fore piles, changes in the colour and quality of soil were observed from a distance, and the exca-

vated soil was studied and materials from it were gathered. As a result of these studies, a culture stratum that varies -13 to -15 metres in depth from the machine ground was observed.

The majority of the materials consist of terracotta pottery, pottery lamps, brick and tile sherds. These finds have been evaluated as surface finds between the beginning and end levels and a historical process beginning in 7th century BC and continuing to the present has been determined. In this historical process, commercial amphorae mouths and bases – typical of their period – hold an important quantitative place. The study of the mouths and bases of the amphorae shows that the islands of Thassos, Rhodes, Chios and Kos, as well as Cnidus, Sinop, Karadeniz Ereğlisi were affiliated with Byzantion between the 5th and 1st centuries BC. Stamped amphorae handles also offer information about the trade range of Byzantion. Handles stamped with the seal of Thassos Island constitute the largest group, although there are also a number of handles from Rhodes-style amphorae.

Upon the completion of security sheeting, archaeological excavations were initiated at the exit shaft, and the basements of demolished modern buildings were remo-



7-8

9-10

ved (fig. 7). The digs at the Byzantine structure (fig. 10) below the foundation remains (figs. 8, 9) of the two architectural strata from the Ottoman Period were also completed. Determining the stratigraphy and the concrete data of the earliest periods of Istanbul, which is known through ancient sources and has been supported by only a very limited number of archaeological finds, may also be possible in these areas. It is not possible to have optimal conditions for a 15 metre-deep test pitting in any other way in such limited urban spaces with dense housing development and a weak fill. We believe that the conditions in which we work offer us an archaeological opportunity.

Western shaft (Hocapaşa)

The security sheeting of the 28.80 metre-diameter ventilation shaft was also completed prior to excavations in this area. After this phase, first the subbasements and foundations of the demolished buildings were removed. However, the foundations of the former tax administration building, which occupies a significant place in the

north of the area, continue into the Byzantine strata.

Overall, the parallel location of the two buildings on the west of the area and the tri-phase foundation and the similarity of the mortar and stone foundations indicate that they are contemporaneous (fig. 11). The building technique and the analyses of finds lead us to assume that the buildings came into use in the late 19th century and that new, masonry buildings were constructed above them in the mid-20th century. The layout of the buildings also corresponds to the Istanbul cadastral maps of the 19th and 20th centuries.

Below this stratum, there lies a fill layer in which channel and foundation fragments have been identified. It also includes earthenware that stretches across a wide time span, from 16th century white Iznik tiles to 19th century bowls for daily use.

A second architectural stratum from the Ottoman Period was unearthed below this fill. To the east of the area, in roughly a north-south direction, on both sides of a street paved with terracotta (brick) and created by a channel the sides of which have been covered with stone plates over a row of stones, stand the foundations of a structure that has connections to this channel. To the



west of the channel, there is a stone foundation bonded by mortar of a strong structure and to the east of the channel, there are multi-phase, irregular stone foundation fragments bonded with muddy mortar and installed parallel or perpendicular to the channel. It is seen that certain portions of the foundations of this area were demolished or removed and rebuilt. In some places, foundation remains are embedded in a dense fill caused by fires. A fragment with a nail driven into it was encountered among the burnt timber fragments in this fill. An analysis of the ceramic materials indicates that these structures were used in the 16th-17th centuries (fig.12).

Located to the west of the excavation site is the Hocapaşa Mosque, still open for worship. Also known as the Hoca Üveys Masjid in the records, the mosque is a 19th century structure. However, in *Hadikatü'l-Cevâmi* of Ayvansaraylı Hafız Hüseyin Efendi, who visited the mosques and masjids of Istanbul and its environs in the mid-18th century, compiling the names of their founders and changes in their structure, the builder of the mosque is identified as Üveys Paşa.⁴ There is still an ongoing debate on which of the two Üveys Paşas this builder was, yet we know that both men lived during late 16th century.⁵ The structure with the strong foundation stretching along the west of the street that we discovered during the excavation survives today as the current Hocapaşa Mosque. The present-day mosque must have been built to replace the former one. Because the finds correspond to the 16th century and the builder of the original mosque lived in the same period, we believe that the aforementioned wall belongs to the first mosque. Furthermore, the renewal phases and the traces of fire observed on the foundations to the east of the street must be related to the 16th and 17th century earthquakes and fires that were recorded in Istanbul.⁶ Following the frequent fires that spread rapidly through congested, parallel timber buildings, these buildings were immediately replaced so as not to leave a large segment of the population homeless. These buildings also overlap with the relatively weak foundations that we have identified. In the subsequent centuries, despite serious restrictions,⁷ the tradition of timber architecture was upheld.

Following the removal of the second architectural stratum from the Ottoman Period, the tri-phase fill layer was encountered. Comprised of channels, pipe rows, wells, stone or dirt floor fragments, foundation fragments made with diverse techniques and placed in various directions, this tri-phase stratum features no archi-

tectural unity. The majority of the finds in the stratum are dated to the late 14th and 15th centuries. This is why it is thought that our excavation area was a vacant lot or a public square during the late Byzantine and early Ottoman periods (fig. 13).

Analysis of the ceramic finds from this stratum is still underway. According to early results, the first phase is dated to the early 15th-16th centuries. Unglazed or mono-glazed sherds from the Ottoman Period, polychrome glazed sgraffito sherds, Miletus ware and early blue and white Iznik samples are among the finds.

The second phase contains 15th century materials from the Ottoman Period. Among these are simple kitchen bowls, as well as monochrome or polychrome glazed sgraffito ceramics and Miletus-style pieces.

In the third phase, on the other hand, 14th to 15th century Byzantine and Ottoman pottery is found together.

Documentation work for all three of the phases has been completed. Fragments of channels, wells, stone pavements and foundations have been removed and excavations were resumed. Below this stratum, multi-phased Byzantine ruins have been unearthed at two separate architectural strata.

The upper Byzantine architectural stratum is comprised of the foundations of a quadrilateral structure and circular buildings. The pipe and channel systems that damaged this stratum were removed after documentation. The entire fill of the area at this level yields 13th-14th century pottery. Based on the finds, the first Byzantine architectural stratum is possibly 14th century. The drystone wall foundation's northern end is intercepted by intersection piles and the southeast end is intercepted by the tax administration building.

⁴ *Eminönü Camileri*, Türkiye Diyanet Vakfı, Eminönü Şubesi, İstanbul, 1987, p. 88.

⁵ *Ibid.*, pp. 88-89.

⁶ Mustafa Cezar, "Osmanlı Devrinde İstanbul Yapılarında Tahribat Yapan Yangınlar ve Tabii Afetler", *Türk Sanatı Tarihi Araştırma ve İncelemeleri I*, İstanbul, 1961, p. 351.

⁷ Ahmet Refik, *Hicri On İkinci Asırda İstanbul Hayatı* (1100-1200), İstanbul, 1930, p. 21.



Foundation fragments are present in the northwest, which is perpendicular to this foundation. No traces from the floor of this foundation have been discovered, it can only be followed from the foundation level upwards. Two circular stone chambers, which are presumed to be contemporaneous with this stone building, have been identified. Built like wells in the soil, the circular chambers are constructed with single rows of stone; the interior is not plastered. During the digs within the large circular chamber, abreast the cross-section of the fill where lime fragments are present, it was observed that the chamber might be the floor. From underneath the burnt layer below this lime layer, it is possible to follow a row of stones that belong to the circular chamber of the second phase. It is believed that these bi-phase circular chambers may have been used as silos. The aforementioned lime floor was discovered after excavating the second chamber located under the large circular one (fig.14).

Because the upper stratum has not yet been removed, it was possible to follow the lower Byzantine architectural stratum only in the southwestern portion of the area. This stratum is comprised of the remains of a single, multi-phased structure, which has a stone, brick, grog and plaster-mix wall with a thick floor, made to contain water. The excavation and documentation of this structure is still in progress. In removing the fill of a space from this structure, the marble head of a Roman female sculpture has been discovered in levels close to the floor.

Following the discovery of the Roman head, a test pitting of 2.5 x 2.5 metres was conducted in the sub-basement of the tax administration building. Consequently, it was observed that the culture fill continues 3.40 metres deep and Roman ceramics were gathered from the fill. Excavation works are currently in progress (fig. 15).

Conclusion

Due to uninterrupted habitation since the 1st century BC in this area, the multi-phase architectural strata have been distorted but survived. Most of these have been identified at the foundation level. Due to this intense architectural activity, there is considerable disorder in the respective fills of the strata. The most striking example of this disorder is the female head from the Roman sculpture discovered in the base fill of the second architectural stratum of the Byzantine period.



15

All of our excavation sites are located to the west of the current station, on the shore of the Port of Prosfiorianos,⁸ which is thought to have been located in the south of the Sepetçiler Pavilion. Considering that the former closed harbour may have been at this same location⁹, the northern entrance (interior of Sirkeci Train Station) in particular is situated within the port. We believe that once digs are completed at all the excavation sites, we will have the opportunity to learn more about the historical development of the port and its surroundings, as well as the commercial and social life of Byzantium-Constantinople-Istanbul.

⁸ Wolfgang Müller-Wiener, *İstanbul'un Tarihsel Topografyası*, İstanbul, 2001, p. 57.

⁹ Wolfgang Müller-Wiener, *Bizans'tan Osmanlı'ya İstanbul Limanları*, İstanbul, 2003.

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Marmaray Project Sirkeci station excavations: Byzantion

Süleyman Eskalen*

The oldest name of Istanbul known today is Byzantion. Etymologically, it is the combination of the Thracian names Buzaz-Byzaz-Vyzas and the suffix *-nt*, as well as the Phrygian suffix *-is*. The leader of this first Megaran colony was Byzas, the eponymous founder of the city. According to one legend, Byzas was the son of a Thracian king and the nymph Semestra, and Antes was his friend. The name of the city is derived from a combination of these names: Byz+Ant+ion.

According to Dionysius of Byzantion, the city was founded by the Megarans in 695 BC. Prior to the establishment of the Megaran colony at Acra (Sarayburnu) at the entrance of the Bosphorus, the first Megarans were settled at Chalcedon (Kadiköy). Herodotus, on the other hand, says that Chalcedon was founded 17 years after Byzantion. According to Dionysius of Byzantion, there was another Greek settlement at the tip of the Golden Horn, between the mouths of Kidaros and Barbios creeks.

The approximate shape of its acropolis walls toward the east and the west indicate the topography of the region. The general view is that this area corresponds to the inner court of the Topkapi Palace. According to the information Psevdo-Kodinos provides in reference to Hesychios, the city walls started from the highest peak of the hill on the shoreline, and extended to the west to the tower of Eugenios (the last tower at the entrance of the Golden Horn). From here onwards, the walls changed direction, heading south and ascending toward Strategion. This area roughly corresponds to the location of Bab-ı Âli, to the west of the Topkapi Palace walls. From this point on, the walls climbed in the same direction to reach the quarter later known as Halkoprateia. After reaching Million of the Roman Period, which coincided with yet another gate of the ancient city, the walls turned east and passed through Topoi of the Byzantine Period (an area to the east of the Topkapi Palace, along the sea), and, descended to the shore from a point near the present-day Ahirkapi Lighthouse. They followed the shoreline to the north, and ended at the tower in Sarayburnu.

The sea walls were not as tall as the land walls and they were protected by breakwaters. There were 27 towers (bastions) on these walls. This entire area more or less encompassed the Topkapi Palace and its environs. The northeastern corner of the acropolis was close to the shore. However, it was located at a height of 40 metres. Therefore, there was a straight alignment along the shore¹.

The view that Strategion was located at the same place as the first city agora is based on the possibility

* Archaeologist.

¹ D. Kuban, *İstanbul Bir Kent Tarihi, Byzantion Constantinopolis, İstanbul*, İstanbul 1996, pp. 16-21.

that the agora was situated somewhere close to the harbor. The earliest verification is the discovery of a tripod dated to the period of Alexander. The exact location of the city's western gate, namely the Trachion Gate, has not been identified. In any event, it has not been possible to reconstitute the precise layout of the first Megaran settlement.

Located immediately outside of the walls to the south, Trachion was a market place in earlier times but was converted to an agora during the city's subsequent expansion. While several 2-metre-high wall stones, discovered during the construction of the railway in 1871, were possibly part of the first Megaran wall system, they could also be remains from the legendary Thracian city of Lygos, which Pliny attributes to the Megarans as their first settlement².

The second city wall system of the Classical Period is comprised of the 35-stadia-long (approximately 5 kilometres) walls that Dionysius of Byzantion describes before the city was demolished by Septimius Severus. This area is considerably larger. Encompassing, apart from the first hill, a portion of the second hill and the valley between them, these walls follow the present-day Babiali Street. Dion Cassius and Herodianos note that these walls were quite formidable in the mid-3rd century³. All three harbors were included within the city walls. Van Millingen dates the construction of these walls to the reign of Pausanias, the period following the Persian expulsion from Byzantion⁴. Despite his brief sovereignty, Herodianos also refers to Pausanias as one of the founders of Byzantion. These walls were restored by Archon Leon (*archeion*: high ruler). It is quite possible that the city walls were expanded and renovated several times during different periods.

Byzantion, which had established trade relations with all the Greek cities, had two harbors: Neoirion on the west and, immediately next to it, Bosporian on the east. Dionysius of Byzantion speaks of a third, deeper harbor protected by a jetty between these two harbors⁵. At the far end of the harbor, towards the Golden Horn, where the land walls intercepted the sea walls, there was a large, circular tower. The harbors and their jetties were protected by chains in the event of an attack. The entrance of the main harbor at Neorian was surrounded by breakwaters and towers. Today, scholars generally agree that the present-day Sirkeci area corresponds to the Port of Neorion. However, there is no data available to identify its exact location or the area it encompassed.

In general, land forms shaped during early geological ages continue to exist today. However, they have undergone considerable transformation in the course of the city's 2500-year history. Natural deposits and the residue recently carried from the basins of two small creeks, Alibey and Kağıthane, have silted up the western portion of the Golden Horn to a large extent (in the Sirkeci area, approximately 250 metres from the present-day shore). It is assumed that between Eminönü and Unkapanı, on the other hand, a large, 200-250 metre-wide strip was filled in with relatively recent debris. Soil studies in the Sirkeci-Eminönü area where the sea was most silted up, indicate that the present-day shoreline had moved at least 250 metres forward. Therefore, it is assumed that there was once a deep inlet in this area.

² Ibid., pp. 16-21.

³ Dion Cassius, LXXV, 10.

⁴ A. van Millingen, *Byzantine Constantinople: The Walls of The City and Adjoining Sites*, London 1899, p. 9.

⁵ D. Kuban, *İstanbul Bir Kent Tarihi, Byzantion Constantinopolis, İstanbul*, İstanbul 1996, p. 21.

S

SİRKECİ

Catalogue

S1

Ware sherd

5th century BC

Terracotta

w: 8.6 cm

Eastern shaft

Excavation inv. no. BMK/2

07.121 ÇÇ

This broken sherd is in the shape of a triangle. It is brick fabric. The exterior of the ware is ornamented with a female figure in profile made with red-figure technique. In front of this figure, hair from another possible figure can be seen. The interior and the exterior of the sherd are coated with black glaze.

MT





S2

Amphoriskos

4th-3rd century BC

Terracotta

h: 10 cm, diameter of base:

1.5 cm

Eastern shaft

Excavation inv. no. BMK/5

07.122 ÇÇ

The rim of the *amphoriskos* is broken and incomplete. It is in camel fabric with an elongated neck. Attached to either side of the neck are handles with voluted upper sections. The bulging upper portion of the body narrows towards the bottom and has a flat base. The outer surface is coated with slip and glaze.

MT



S3

Guttus

4th-3rd century BC

Terracotta

h: 5.9 cm

Eastern shaft

Excavation inv. no. BMK/7

07.124 ÇÇ

Half of the *guttus* is broken and incomplete. The mark from the broken handle on the body denotes ring handles. It is of gray fabric with a depressed globular body and a low ring base. The exterior and bottom of the base are coated with black varnish.

Parallel example: Rotroff 1997, pl. 83, no. 1140.

MT



S4

**Handle fragment with
stamp**

4th-3rd century BC,

Rhodes

Terracotta

3.9 x 8.4 x 9.9 cm

Eastern shaft

BMK-DK 9

"ΕΓΓΕΙΜΑ ΓΟΡΑ ΑΡΡΙΑΝΙΟΥ"

inscribed in three lines inside the
rectangular stamp is a name in
Greek. The inscription has been
deciphered by Philologist Feza
Demirkök of Istanbul Archaeolo-
gical Museums.

MT





S5

**Handle fragment with
stamp**

4th-3rd century BC, Thasos

Terracotta

3.6 x 6 x 9.7 cm

Eastern shaft

BMK-DK 3

Inside the rectangular stamp is a dancing satyr with inscriptions on either side of it. The poor condition of the inscription makes it difficult to decipher. It is possibly the name of an individual.

Parallel example: A. M. Bon and A. Bon, 1957, fig. no. 1025.

MT



S6

**Bowl base with kiln
equipment**

Byzantine, 13th century AD
Terracotta
h: 4 cm, w: 5.7 cm
North Entrance
Excavation inv. no. SMK/81
07.133 ÇÇ

The interior of the brick-coloured fabric bowl is ornamented with an incised monogram. The interior has a slip but no glaze. In the artifact with excavation inventory number SMK/211 (catalogue no. 7), a similar monogrammed bowl base is seen in glazed form. The tripod used to place ceramics on top of one another in the kiln remains attached to the base of the bowl in this example. The finds discovered at the North Entrance point to the presence of a ceramic workshop in this area.

Parallel examples: Talbot Rice, 1930, p. 79, fig. 6-24; Wallis, 1907, p. 26, pl. VI-fig. 11.

MT



S7

Ware base

Byzantine, 13th century AD
Terracotta
h: 2.8 cm, w: 6.2 cm
North Entrance
Excavation inv. no.
SMK/211

The ware features brick fabric, yellow glaze interior and incised brown monogram. A similar monogram is present on a bowl base with excavation inventory number SMK/81 (catalogue no. 6). At the bottom of the bowl, there are traces of two opposing handles.

Parallel examples: Talbot Rice 1930, p. 79, figs. 6-24; Wallis 1907, p. 26, pl. VI-fig. 11.

MT



S8

Bowl base

Byzantine, 13th century AD
Terracotta
h: 2.3 cm, w: 5.3 cm
North Entrance
Excavation study no.
SMK-et/82

Slip-coated brick fabric with no glaze. The decoration, which features concentric circles, can be seen in its glazed form in the bowl base with excavation study number SMK-et/80 (catalogue no. 9).

Parallel example: Böhlendorf Arslan, 2004, sec. III, pl. 179-12.

MT



S9

Bowl base

Byzantine, 13th century AD
Terracotta
h: 2.3 cm, w: 7 cm
North Entrance
Excavation study no.
SMK-et/80

As opposed to the bowl base with excavation study number SMK-et/81 (catalogue no. 8), the brick fabric and concentric circle motifs in incised-ware technique can be seen as coated with yellow glaze.

Parallel example: Böhlendorf Arslan, 2004, sec. III, pls. 179-12.

MT



S10

Ware sherd

Byzantine, 13th century AD
Terracotta
w: 9.6 cm
North Entrance
Excavation study no.
SMK-et/260

The interior of the brick fabric is decorated with spiral and linear decorations inscribed in incised-ware technique. This piece is coated with a sub-glaze slip but no glaze. A similar sherd with excavation study number SMK-et/261 (catalogue no. 11) features the glazed version of similar motifs.

MT



S11

Bowl base

Byzantine, 13th century AD

Terracotta

w: 13 cm

North Entrance

Excavation study no.

SMK-et/261

The brick fabric of the base features spiral and linear motifs in incised-ware technique. The bowl is coated with yellow and green glaze. An unglazed version of a similar motif can be seen in the sherd with excavation study number SMK-et/260 (catalogue no. 10).

Parallel example: Böhlendorf Arslan, 2004, sec. III, pls. 178-2.

MT



S12

Kiln equipment

Byzantine

Terracotta

h: 1.4 cm, w: 5.6 cm

North Entrance

Excavation inv. no.

SMK/107

This triangular piece uses brick fabric with slightly flat corners and glaze marks. The tripods are placed between ceramics in a kiln during firing to prevent them from sticking to one another. Since they are often used more than once, there may be several layers of glaze on them. The traces of glaze dripping from the pottery can be seen on this tripod.

MT



S13

Head of sculpture

Roman, 1st-2nd century AD

Marble

h: 28 cm, w: 21 cm x 11 cm

Western shaft

Excavation inv. no. HMK/55

07.19 T

There are fractures and missing sections of the nose, chin, neck and back of the head. The hair is styled in curls and is twisted into a bun at the neck. The hairstyle and the hair band may indicate that the young woman was a member of the imperial family. The meditative expression introduced during the Hellenistic Period is also visible here. The head is slightly tilted to the right.

MT



S14

Coin-box

Ottoman

Terracotta

h: 7 cm, diameter of base:

2.8 cm

Western shaft

Excavation inv. no. HMK/36

There are cracks on the body. The coin box of brick fabric, features an ogee form and a flat base. There is a small aperture in the upper section for slipping in the coins.

MT



S15

Pitcher

Ottoman

Terracotta

h: 13.2 cm

Western shaft

Excavation inv. no. HMK/43

A section from the rim and the handle are broken and missing. The white fabric has a slip and is coated with varnish. At the point where the neck connects to the body, there is a zigzag band motif. The sides of the band have raised motifs, whereas the middle is incised.

MT



S16

Plate base

15th century AD

Terracotta

h: 2.6 cm, w: 12.5 cm

Western shaft

Excavation inv. no. HMK/48

07.129 ÇÇ

The plate features brick fabric and the profile of a man in the interior in incised-ware technique. The rim is decorated with incised nodules and the surface is yellow with green glaze.

MT



S17

Dish

Ottoman, Iznik style,
Late 15th–Early 16th
century AD

Terracotta

h: 4 cm, diameter: 19.5 cm

Western shaft

Excavation inv. no. HMK/22

This dish was discovered in fragments and reassembled. It is in white fabric, with a flaring rim, a flat-sided body that narrows towards its ring base. In terms of its fabric, it is distinct from the advanced 16th-century Iznik examples of its kind. The slip is painted with shades of blue and coated with a transparent glaze. The glaze and the surface are in poor condition. The motifs on the plate resemble marble mosaic designs. Tiles with decorations of this kind are often encountered on baseboards in architecture.

MT



S18

Jar

Ottoman, Iznik style,
Late 15th–Early 16th
century AD

Terracotta

h: 12.1 cm, diameter of
rim: 7 cm

Western shaft

Excavation inv. no. HMK/52

There are fractures and missing pieces on the body. The jar features white fabric with a simple, flat rim, a short cylindrical neck, and wide shoulders. The body narrows towards the bottom and has a ring base. In terms of its fabric, it is distinct from the advanced 16th-century Iznik examples of its kind. The white slip is coated with blue and white paint with turquoise and a transparent glaze. The jar is divided into sections of various widths and decorated accordingly. It features floral motifs with foliated branches as well as wave and radial motifs.

MT



S19

Pitcher (?)

Ottoman, Iznik style,

Late 15th-Early 16th

century AD

Terracotta

h: 10 cm, diameter of base:

7.3 cm

Western shaft

Excavation inv. no. HMK/53

Half of the pitcher is broken and missing. In the transition from the neck to the body, a small fragment of the handle is visible. It features white fabric, a white slip and it is coated with cobalt blue and white paint on a turquoise base and transparent glaze. In terms of its fabric, it is distinct from the advanced 16th-century Iznik examples of its kind. There are consecutive lobes in the transition from the neck to the body, adjoining triple-spot motifs on the body and a chain-pattern towards the base.

MT



S20

Ring

Ottoman

Gold and stone

w: 1.9 cm

South Entrance

Excavation inv. no. CMK/1

07.36 M

This roundish ring features a cut stone with wide surfaces. The setting is vertically cusped with a band of wave-pattern. The bottom of the setting is also closed. There are lotus decorations at the points where the ring band connects to the setting.

MT



FORMER
SULTANAHMET
PRISON

SC

The Great Palace excavation

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* Archaeologist, Istanbul
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Istanbul before the Byzantine period

In the course of history, Istanbul, "the Queen of Cities" has been the center of many civilizations due to its geographical location and increasing importance as an imperial capital. Historical studies reveal that the first city established here was Byzantion. Roman writer Pliny speaks of a village named Lygos in this area, prior to the establishment of Byzantion. According to some researchers, the name Byzantion was given by the Phrygians.

The name Byzantion is based on several myths. One of these myths describes Byzas as the eponymous founder of the city. According to this story, Io, the daughter of King Inachus of Argos, was a priestess at the Temple of Hera in the city of Argos. One day, Zeus saw Io and fell in love with her. Upon learning of this, Hera was overcome by jealousy. To protect his lover from the wrath of Hera, Zeus turned Io into a heifer. Hera demanded that Zeus present the heifer to her, and she then sent Argus, a giant with a thousand eyes, to guard Io at all times. Zeus sent Hermes to slay Argus, and Io was released.

This time, Hera sent a gadfly to pursue the heifer. Fleeing from the gadfly, Io reached the Istanbul Strait and crossed to the other shore. The Strait was thus named Bosphoros, meaning "cow passage". After crossing the Golden Horn, Io gave birth to her daughter Keroessa. Keroessa and the sea god Poseidon had a son whom she named Byzas. When Byzas grew up, he founded Byzantion (place of Byzas). With the help of Apollo and Poseidon, he surrounded the city with walls. According to a different tale, Byzas was the leader of the Megaran colonists who established a colony in Sarayburnu. Before he founded the city, he consulted the oracle of Apollo at the Temple of Delphi. The oracle instructed Byzas to settle opposite "the Land of the Blind." The oracle called these early settlers blind because they did not see the beauty of Sarayburnu and settled in Chalcedon (Kadıköy) instead. Historian Herodotos also refers to the Chalcedonians as blind people, arguing, "if they hadn't been blind, they would not have chosen a place that was not nearly as beautiful as the one within their reach."

The city founded in 667 BC soon prospered and expanded through trade and fishing due to its location on the Black Sea trade route. A Phrygian fibula discovered during rescue excavations conducted by the Archaeological Museums in the Great Palace area, as well as Eastern Greek, Corinthian and Attic ceramics from the Archaic Period, all confirm the presence of trade and pros-

perity in the area. The cities of Byzantion and Chalcedon fell under Persian rule in 512 BC. During the Ionian Revolution of 500 BC, the city was heavily damaged. Coming under the influence of Athens in 478 BC, as the richest member of the Attica Sea Union, Byzantion began to mint coins at the end of this century.

Up to the time of Alexander the Great, the city went back and forth between Athenian and Spartan rule. Liberated by Alexander, the city continued its close trade relations with the Ptolemaic Kingdom of Egypt. Byzantion fell under the rule of Rome in 146 BC and joined Bithynia after 74 BC. During the struggle for power between 192 and 196 between Pescennius Niger and Septimus Severus, the people of Byzantion supported Pescennius Niger. When Septimus Severus triumphed, he punished the locals severely by destroying the city's walls and major buildings and revoking all their legal rights. In 197, he reinstated these rights and embarked upon a series of construction and rebuilding projects in the city. In time, these projects lost momentum, leaving many important structures unfinished. Chosen as the new capital of the Roman Empire in 330 AD by Constantine I, the city reassumed its former glory (fig. 1).

The center of the city, which was surrounded by walls from earliest times, is the area encompassed by the present-day Topkapı Palace as well as Sarayburnu. Temples of Zeus, Apollo, Artemis and Aphrodite were located on this city's Acropolis, the area where the Topkapı Palace stands today. The harbours were situated to the northwest of this Acropolis, while the Temple of

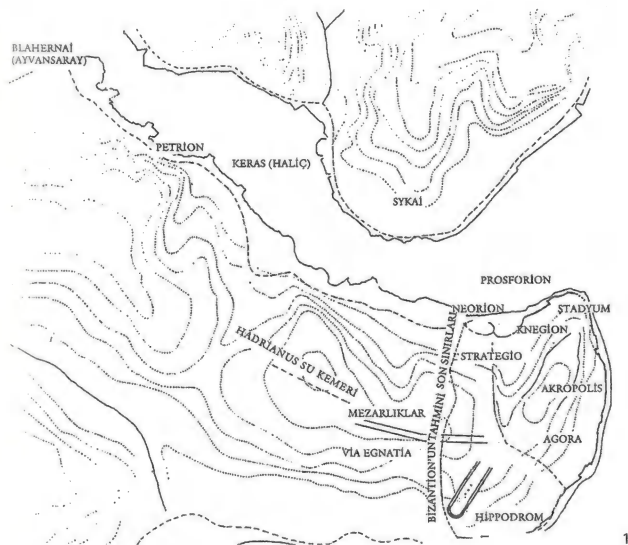
Poseidon and the Altar of Athena were located in Sarayburnu. In the 4th century BC, as a result of the city's strong ties with Ptolemy I, temples were built for the Egyptian gods, Serapis and Isis, as well. Following expansion in the Hellenistic Period, the Roman-Era city sprawled across a large area, including the present-day Eminönü and Fatih quarters.

Istanbul during the Byzantine period

As it became increasingly difficult to administer the Roman Empire from Rome, Constantine I declared Byzantion to be the new capital of the empire. This new capital was inaugurated on 11 May, 330. Inviting senators, high officials and noblemen from Rome to his new capital, Constantine I increased the population of the city and initiated a development program worthy of the new capital's glory. Despite the polytheistic faith of Rome, he made Constantinople into a Christian city and embraced Christianity himself. Known as "Second Rome" or "New Rome" at the time it became the capital, Byzantion was referred to as "Constantinople" in later years.

In 395, Emperor Theodosius (379-395) officially divided the Roman Empire into two parts. Although the idea was collaboration between the two halves, the ties between the Eastern and Western Roman administrations weakened in time. Invaded by Germanic tribes at the end of the 5th century, the Western Roman Empire ceased to exist in 476 AD. The Eastern Roman Empire, which mo-

1. Istanbul during the Roman Period



modern historians refer to as Byzantium, on the other hand, persevered for another thousand years through a new identity in which Roman administrative and legal systems were amalgamated with Christianity and Greek culture.

As the economic, military, cultural and religious center of this empire, Constantinople continued to develop in the 4th and 5th centuries. The expanded urban area was divided into 14 administrative wards. The Great Palace area encompassed the 1st and 3rd administrative wards. Once Christianity was declared the official state religion in the 4th century, wide-spread construction of churches and monasteries began. During the reign of Heraclius (610-641), Greek became the official language of the state.

The reign of Justinian I (527-565) was the period in which the borders of the Byzantine Empire was greatest, and the population of the city exceeded half a million. This was a period recognized as the "First Golden Age of Byzantium". The "Nika Revolt" that erupted in 532 caused havoc and widespread destruction in the city. Certain parts of the Great Palace, as well as the Zeuxippos Baths and the Church of Hagia Irene - damaged by the fires during the riots - were rebuilt. A basilica commissioned by Theodosius II (402-450) was destroyed during the riots, and the church of Hagia Sophia was built in its place. Constructed between 532 and 537, the church became the most significant institution of the city (fig. 2).

The Empire lost a significant portion of its lands during the 7th and 8th centuries due to the attacks of the Avars, Bulgarians, Persians and Arabs. The city endured a difficult period of devastating earthquakes and epidemics of plague. The "Iconoclastic" movement (726-842), initiated by Leo III (717-741) and supported by his successors, led to disorders and internal conflicts both within the city and across the Empire. Theophilus (829-842) reorganized the state administration and commissioned the repair of city walls as well as an important portion of the Great Palace. Following the end of the Iconoclastic Movement and military successes of the Empire, the Macedonian Dynasty (867-1056) came to power and initiated the "Second Golden Age of Byzantium".

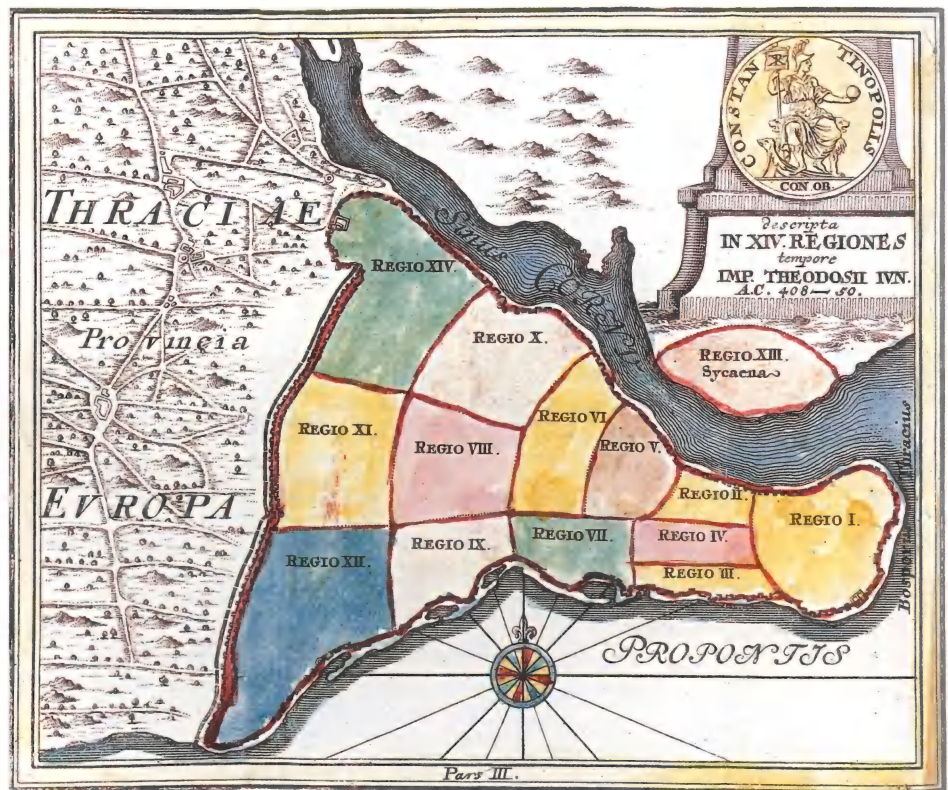
In the aftermath of the Battle of Manzikert (1071), a majority of its Anatolian lands were lost to the Seljuks. Foreign mercenaries and merchants settled increasingly in the city throughout this period.

During the rule of the Komnenos Dynasty, Constantinople became a target of the Fourth Crusade and the city was invaded by the Latins. Severely damaged during

this occupation (1204-1261), remaining monuments and priceless works of art were looted or destroyed. This invasion transformed the largest city of the Middle Ages into a poor and dilapidated shadow of its former self, with a population of merely forty to fifty thousand inhabitants. After this period, the impoverished city of Constantinople continued to contract in size as nobles and the rich migrated to Nicaea (Iznik). Michael VII Palaiologos (1259-1282) reconquered the city from the Latins, but the expansion of the newly emerging Ottoman state began to overtake Byzantine lands. Again, the city suffered from civil wars, devastating earthquakes and recurring plagues.

In the last years of the Empire, the former city center around Hagia Sophia, the Hippodrome and the Great Palace were neglected and the structures were in ruins. Travellers who visited the city at the turn of the 15th century describe it as a cluster of dispersed villages surrounded by walls.

2. Istanbul during the reign of Theodosius



The Great Palace and its architecture

In 330, upon declaring Byzantium, or rather Constantinople, his new capital, Constantine I embarked not only on a reconstruction of the city but also ordered the construction of an imperial palace to be modeled after those in the former capital of Rome.

Meaning "the Great Palace" and also referred to as "Palatium Magnum" or "Mega Palation" the palace complex sprawled across an area of approximately 100 thousand square metres on a hill that extended from the present-day Sultanahmet Mosque, to the shores of the Sea of Marmara. According to Byzantine sources, the Great Palace was surrounded by the Hippodrome and Zeuxippos Baths on the northwest and Augusteion Square, Hagia Sophia and the Senate Building on the northeast. It extended all the way to the sea in the east and south. At its southwest corner lay the Hormisdas Quarter and the Boukoleon Palace.

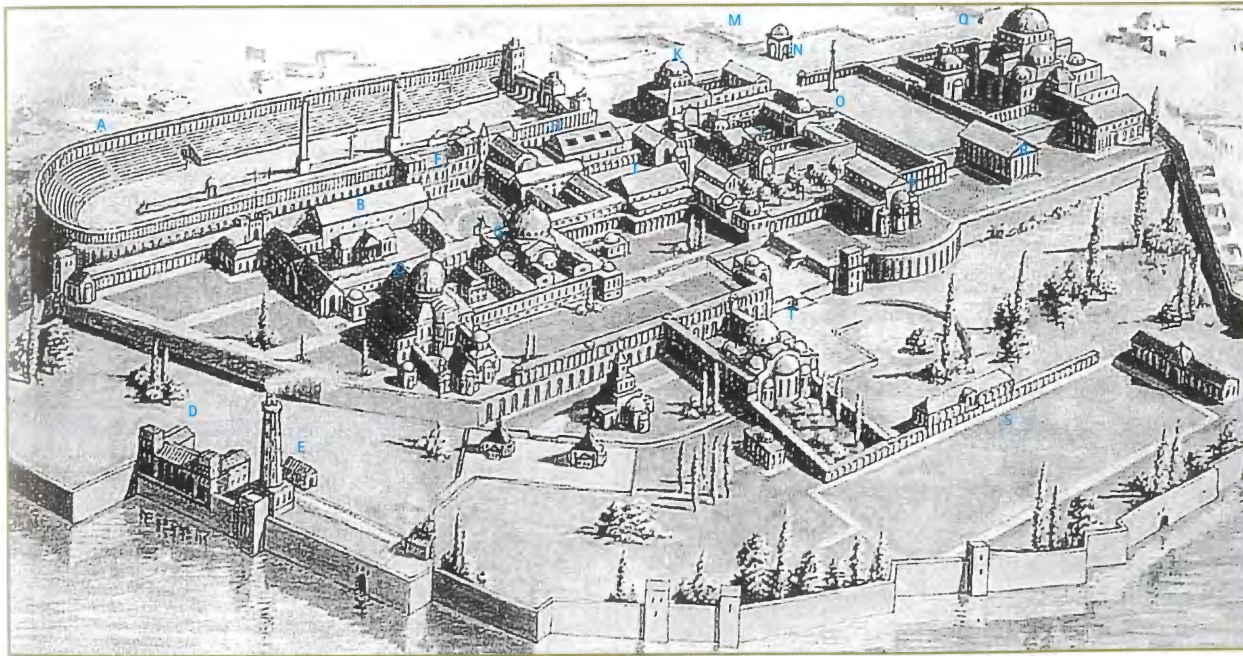
The Great Palace was surrounded by walls. Its steep slope descending to the sea formed three main terraces. With its intermediary terraces created for smaller structu-

res, there were six terraces. The upper terrace comprised the administrative center, the *Oktagonon*, which were the private chambers of the Emperor, as well as the Palace of Daphne, which included three churches and a baptistry and was connected to other parts of the Palace by an underground tunnel. In addition, the upper terrace included the 19 *Accubita* ("couches") court hall, which was regarded as the most important hall of the palace, as well as the *consistorium*, which was the meeting hall for the imperial councils, and the *Magnaaura*, used for imperial ceremonies and audiences. The central terrace consisted of gardens, outdoor areas, various pavilions, and a game field (*tzykanisterium*) built by Theodosius II. The lower terrace included the Boukoleon Palace and the harbour¹ (fig. 3).

According to Bury, Constantine's Palace was not much larger than Diocletian's Salona Palace on the Dalmatian coast and had a rectangular form². Although the Great Palace was continually expanded with new outbuildings, the original plan during the reign of Constantine was more systematically designed. Many researchers argue that the Split (Spalato) Palace built after the Salona Palace was demolished, resembles the palace of Constan-

3. Great Palace reconstruction (Vogt 1934)

- A. Hippodrome
- B. Closed hippodrome
- C. Chrysotriklinos
- D. Boukoleon Palace
- E. Pharos
- F. Kathisma
- G. Trikonkhos
- H. Church of Saint Stephanos
- J. Konsistorion
- K. Zeuxippos Baths
- L. Palace Gardens
- M. Million
- N. Pillar of Justinian
- O. Chalke Gate
- P. Magnaura
- Q. Church of Hagia Sophia
- R. The Senate
- S. Tzykanisterion
- T. Nea Ekklesia



3

¹ D. Kuban, *Bir Kent Tarihi – Bizantion, Konstantinopolis, Istanbul*, Istanbul 2000, p. 145.

² J. B. Bury, *History of the Later Roman Empire*, 2 volumes, New York 1958, v. I, p. 78.

tine. Unfortunately, the Istanbul Great Palace area, which is densely populated today, does not easily cater to archaeological excavations to obtain the necessary data (fig. 4).

Between the 4th and 11th centuries, the Great Palace served as the residence of Byzantine emperors. The palace was continuously expanded with outbuildings until the end of the 10th century. The initial structures of the Great Palace are dated to the reign of Constantine I (324-337). The Palace of Daphne, the Chalke Gate, and the *Magnaure* audience hall, were constructed during this period. Destroyed during the 532 Nika Revolt, the structures were rebuilt by Justinian I (527-565), while the Palace of Hormisdas, where Justinian I had lived as crown prince, was also included within the boundaries of the Great Palace.

From the 11th century onwards, the Great Palace gradually lost its former significance. The Komnenos Dynasty settled in the Palaces of Mangana and Blachernae. At this period, the Great Palace was predominantly used as an official residence and reception site. When the Latins invaded Constantinople in 1204, Latin Knights convened at the Great Palace to elect the new Latin emperor. However, during the Latin conquest, the Palace was looted like many other structures in the city. Michael VII Palaiologos, who reclaimed the city in 1261, lived in the Great Palace until the restoration of the Blachernae Palace was completed. In the ensuing years, the Great Palace was completely abandoned. In disrepair, several of its structures collapsed, while materials from others were taken away to be used in the construction of new buildings. The drawings of Boudelmonti, who visited Istanbul in 1420, reveal a number of structures within the premises of the Great Palace³. Created and published by Onufrio Panvinus (1529-1568) of Verona in 1699, in the engravings – the originals of which are believed to have been made in the 1450s – except for a few domed buildings, the areas surrounding the Hippodrome and the Great Palace appear almost empty immediately before the Ottoman conquest.

The Great Palace area during the Ottoman period

The Historic Peninsula continued to maintain its significance during the Ottoman Period. Upon declaring Istanbul his new capital, Sultan Mehmed II, the Conqueror (1444-1445/1451-1481), initiated the construction of the Topkapı Palace in the immediate vicinity of the Great Palace. Like its predecessor, the Topkapı Palace was set in a

garden surrounded by walls and comprised of a number of independent buildings. When Mehmed II conquered Istanbul in 1453, the Great Palace had been in disrepair for a century and a half and was completely dilapidated. The Palace area remained vacant for some time; its remains were even briefly used as a prison house. Following development in the area, the Palace remains were buried under large buildings, mansions, mosques and *masjids* (e.g. Sultan Ahmet Mosque, Ishak Paşa Mosque, Akbıyık Masjidi, etc.). It is known that in the 17th century, the mansions of high-ranking court officials were also located in this area. At the turn of the 1600s, Sultan Ahmet I (1603-1617) commissioned the construction of a large mosque complex and bazaar over the former palace grounds.

According to 16th-17th century sources, wild beasts such as lions, panthers, and wolves were bred for the Ottoman Palace inside an old church near the Hagia Sophia; the church was called "Aslanhane", or the "House of Lions". Although it is not certain, the Chapel of Jesus (Soter Khristos tes Khalkes) located at the entrance of the Great Palace known as the Chalke Gate, was probably the church converted into the "Aslanhane" during the Ottoman Period⁴.

In his accounts of the Byzantine palace during a visit to Istanbul, British traveller J. Sanderson (1548-1602) refers to the "Aslanhane" and notes that some of the surviving galleries of the former Imperial Palace housed elephants, panthers and other wild animals.

According to the 18th-century writer Inciçyan (1758-1833), Aslanhane was near Hagia Sophia and the Hippodrome and the upper storey of the structure housed the chambers of engravers⁵. Evliya Çelebi (1611-1682?) writes, "One finds cells on the upper storey of the *Aslanhane*; the engravers of the Court are accommodated here."

Following the Ottoman conquest, a "Cebehane", or Armory, was built in this area using remains of older structures. Used as a storage facility for gunpowder and weaponry, "Cebehane" also served as a barracks and production center. According to Inciçyan, the "Nakkaşhane", or the House of the Engravers, burned down in 1802 and it was consequently demolished in 1804 for the expansion of the "Cebehane". During a fire that broke out on the evening of November 16th, during the Alemdar Mustafa Paşa Riots of 1808, the "Cebehane" also burned down entirely.

In 1846, Sultan Abdülmecid commissioned the construction of the Dar-ül Fünun (University) Building on the palace grounds (southeast of Hagia Sophia) from the Fossati brothers, who had come to Istanbul to work on

4. [opposite page] The Great Palace area today; Museum of Turkish and Islamic Arts (İbrahim Paşa Palace), Sultanahmet Square (Hippodrome), Sultanahmet Mosque, Hagia Sophia, Hagia Irene, and Topkapı Palace

³ A. B. Yalçın, "XV. yüzyılda Bir İtalyan Gezgin: Cristoforo Boudelmonti ve Konstantinopolis", Istanbul Üniversitesi, 550.Yıl, Uluslararası Bizans ve Osmanlı Sempozyumu (30-31 Mayıs 2003), Istanbul 2003, p. 382.

⁴ A miniature, which reveals how this structure was used as a zoo, is included in *Şehname-i Selim Han* (1581).

⁵ P. G. Inciçyan, *18. Asırda İstanbul*, trans. H. D. Andreasyan, Istanbul 1976, p. 58.



the restoration of the Hagia Sophia. Designed by Gaspar Fossati (1809-1883) the projected construction budget was 130 thousand *kurush* and the estimated time of completion was two years. However, construction dragged on for years and the University was not finally completed until 1854 (figs. 6-7-8).

This building is a three-storey masonry structure comprised of two square blocks with central courtyards and an entrance connecting the two. The entrance is recessed to create a U-shaped courtyard for ceremonies. The northern and southern façades feature double-storey Ionic pilasters with Ionic capitals. These areas are completed with a depressed pediment. Located at the single most important spot of the Historic Peninsula, the building reflects an architectural style that is distinguished from the other surrounding historic buildings in terms of its size and massive structure.

Upon its completion, Dar-ül Fünun was not inaugurated as a university. As far as we know, the building was first used as a hospital for French soldiers who came to Istanbul during the Crimean War (1854-1856). Although classes designed like seminars commenced in 1863, the building was allocated first to the Ministry of Finance in 1864, and subsequently to the Ministry of Justice and Mortmain Estates. In 1876, the first "Mebusan" (Chamber of Deputies) and "Ayan" (Chamber of Notables) councils were held here. The spacious ceremonial hall was converted into a meeting hall for the Council of Deputies. Following Sultan Abdülhamid II's dissolution of this Council, the building remained out of use for thirty years. Following the proclamation of the Second Constitution in 1908, the new Council of Deputies reconvened in the same building.

Used as the Istanbul Palace of Justice in the ensuing years, the Dar-ül Fünun building was almost entirely

5. Sultanahmet Square and surrounding areas after a fire in the first quarter of the 20th century; next to Hagia Sophia, the Palace of Justice designed by Fossati.





6



7



8

6-7. Designed by Fossati, the Darü'l Fünun (University) building was later used as the Palace of Justice. Here, the building stands between Sultanahmet Mosque and Hagia Sophia. Yıldız Albums, 90615.

8. Meclis-i Mebusan (Chamber of Deputies) was inaugurated on 17 December, 1908, at the Palace of Justice (R. Ousterhout-N. Başgelen, *Tarihi Kartlarda Yaşayan İstanbul. Osmanlı Öncesi Anlatıları*, İstanbul, 1995).

destroyed by fire on the evening of December 3, 1933. Soon thereafter, the remains of the Palace of Justice were completely removed.

The inscription tablet at the Tevkifhane Street entrance of the Sultanahmet Prison House, the construction of which began to the south of the Dar-ül Fünun building between 1918 and 1919, reads: "Dersaadet Cinayet Tevkifhanesi 1337" (Istanbul House of Detention for Murder Convicts 1337). The prison, which was used until the early 1980s, remained vacant for some time and was subsequently restored and converted into a hotel (fig. 5).

History of the excavations

Excavation work conducted since 1997 under the auspices of the Istanbul Archaeological Museums in the garden of the Sultanahmet Eski Cezaevi (Former Prison House) encompass an area of approximately 17 thousand square metres⁶. This area, which includes a portion of the Great Palace from the Byzantine Period, is of particular importance due to its proximity to the Augusteion (Hagia Sophia Square), the Hippodrome, and the Church of Hagia Sophia.

The excavation site can be divided into three major areas as (a) the area where the Dar-ül Fünun building was set, (b) the garden of the Eski Sultanahmet Cezaevi, and (c) the area where the vaulted structures are located.

Excavations conducted in the Dar-ül Fünun building area

During the construction of the Dar-ül Fünun Building, several important archaeological finds were revealed. One of these was the upper jaw⁷ of a serpent head that belonged to the bronze wreathed column once located at the center of the Hippodrome, while another is the tablet with an inscription that was part of a silver statue of Emperor Arcadius' (395-409) wife Eudoxia⁸.

In the course of the works conducted in the area where the Dar-ül Fünun building was located, several building remains from the Byzantine Period were identified although the function of these buildings remains unclear. These remains were destroyed by the foundation, courtyard and floors of the Dar-ül Fünun building. A cistern⁹ - previously identified by P. Lemerle -, mosaic



9

10



9-10. Mosaic floor fragments dated to 6th-7th centuries (below, detail from the mosaic) and burial ground

⁶ As part of the project to convert the Sultanahmet Eski Cezaevi (Sultanahmet Prison) to a hotel facility, excavations and test pittings were conducted in the northeast and southeast areas of the building between 1992 and 1996 by Istanbul Archaeological Museums.

⁷ This object is displayed with inventory number 18 (M) at the "Istanbul Throughout the Centuries" hall of Istanbul Archaeological Museums.

⁸ Registered with inventory number 221 at the Hagia Sophia, this stone pedestal is displayed in the garden of the museum.

floor fragments dated to the 5th-6th centuries, and a burial site were also unearthed in this area. The mosaics form a circular border within square slabs with the main decoration inside the border. Designed with white, black, green, yellow, and vivid shades of red, the mosaics feature geometric and stylized floral motifs. Underneath the mosaic flooring, a total of 81 human skeletons and a plethora of bone fragments was discovered. Next to the skeletons, two 11th-12th-century terracotta bowls, a glass perfume bottle (catalogue no. SC 13), and a bronze coin were found. A part of the mosaic floor had been destroyed when these bodies were buried. The fact that the burials were made by destroying the mosaic floor and dating of the very few finds next to the skeletons indicate that the area was used as a burial ground after the Great Palace had been abandoned (figs. 9-10).

Work conducted in the north and west corners of the south-block inner courtyard of the former Palace of

Justice has revealed a 6.20 metre-wide monumental gate onto Augusteion Square.

On both sides of the gate, a wall, possibly an enclosure wall made of large tuff and marble blocks and set on a foundation, has been unearthed. Stretching in a northeast-southwest direction, this wall is built with foliated bricks and grog. The enclosure wall has been preserved at a height of up to 3 metres in certain areas. Its northeastern end curves toward the southeast from the entrance of the Dar-ül Fünun Building, while its southeastern end curves to the southwest before the Tevkifhane Street wall.

On each side of the gate are two marble niches, 1.88 metres apart and designed to ornament the gate frames. Set on a marble platform, the interior of the niches are semi-circular and the edges are moulded. The upper portions of the niches are broken, but small joint holes on the interior indicate that statues were once placed here. Furthermore, seam joins and pillar marks observable on



11 Niches, possibly part of the Chalke Gate

⁹ In a test pitting he conducted under the supervision of Istanbul Archaeological Museums between 1936 and 1937 at the former Palace of Justice, P. Lemerle encountered some wall remains. The studies of these walls were drawn by then-Archaeological Museums architect A. Saim Ülgen and published by Semavi Eyice in 1964.

the platform confirm the presence of an *embolos* in this area (fig. 11).

Along the enclosure wall and in front of the marble platform, three rows of steps, made of marble blocks, have been identified. In front of these steps, there is a floor cover made of marble plates.

It is believed that this gate is the "Chalke Pule" or the Bronze Gate (the main entrance of the Great Palace) mentioned in Emperor Constantine VII Porphyrogenetos's (945-959) *Book of Ceremonies* (*Imperatoris de ceremoniis aulae Byzantinae*)¹⁰.

Researchers offer different views about this Chalke Gate, the main entrance to the Great Palace. Labarte, Ebersolt, Miranda and Vogt place Chalke to the south of the Augusteion, in the area where the Zeuxippos Baths are located.¹¹ Müller-Wiener and Bardill argue that the Chalke Gate lies on the Axis of the Million, to the southeast of the Augusteion¹². Following rescue excavations conducted by the Istanbul Archaeological Museums, it has become apparent that the location of the Chalke is on the Axis of the Million, to the southeast of the Augusteion, as suggested by Müller-Wiener and Bardill.

The Chalke Gate opened up to the *Mese* and served as some sort of a hall between the Palace and Augusteion Square. Kedrenos notes that the first structure was built by the architect Aetherius during the reign of Anastasius I¹³ (491-518). It was severely damaged during the 532 Nika Revolt and was subsequently rebuilt by Justinian I (527-565) but on a different plan. In *The Edifices* (*De Aedificiis*), Prokopios speaks of the Chalke Gate and recounts that the roof, shaped as a sphere suspended in mid-air, was supported by four pillars. The dome and its arches were decorated with mosaics portraying Justinian's victory over the Goths and the Vandals, as well as depictions of Justinian and Theodora. The floor, however, was covered with green Spartan marble and white marble with blue veins¹⁴.

The Iconoclastic Movement began with the removal of the Icon of Jesus Christ (Khristos Khalkites)¹⁵ decorating the façade of the Chalke Gate in 726 during the reign of Leo III. Although the Icon was reinstalled by Irene in 787, Leo V replaced it with a cross. In 843, after the end of the Iconoclastic Movement, the famed artist, Lazaros, reproduced the icon as a mosaic on the façade of the Chalke Gate¹⁶. It is probable that in early 7th century, the Chalke Gate provided access to underground dungeons¹⁷. Used as a prison in the 7th and 8th centuries, Chalke was restored through the personal efforts and

treasure of Basil I (867-886). The walls were decorated with colourful marble tiles, and the place was used as a court of justice¹⁸. After the Great Palace was surrounded by a wider enclosure wall by Nikephoros II Phokas (963-969), Chalke lost its former importance as the main palace entrance. Romanos Lekapenos I (920-944) built the *Soter Khristos tes Khalkes* Chapel immediately next to Chalke. During a military expedition against the Russian Knjaz Swjatoslaff in 971, Emperor John I Tzimiskes (969-976), demanded that this chapel, which could accommodate only 15 people, be rebuilt from a new plan. He decorated the chapel with mosaics, installed a grave for himself and was buried there¹⁹. The chapel remained intact until 1804; it is possible to see its location in engravings and drawings from the 18th century. The bronze doors of Chalke, on the other hand, were removed by Isaac II Angelos (1185-1195) and moved to the Church of Saint Michael, which he had commissioned²⁰.

In the section describing the funerary services of emperors, *The Book of Ceremonies* refers to Chalke:

... Later the deceased emperor's removed clothes are taken to Chalke by a *Protospatharios* (a high title granted mostly to commanders of Themes). The clothes are preserved there until the traditional ceremony is celebrated in Chalke. During the removal of the deceased's clothes, the *Praeipositus Sacri Cubiculi* (grand chamberlain) makes a sign and the participants repeat "Exit/Ascend Oh Emperor" three times. The deceased's clothes are then taken from Chalke by *Protospatharioi* and, passing through *Mese*, are carried to the area where the interment and the ceremony are to take place. There, upon the *Praeipositus Sacri Cubiculi* sign, the participants repeat the following verse three times: "Enter, oh Emperor, the King of Kings and God of Gods"²¹.

The frequent occurrence of the name "Chalke" in written sources through the centuries reveals the highly symbolic nature of this structure. Until the mid-10th century, this gate symbolized the separation between the public and their rulers. Like most other imperial palace gates, the Chalke Gate was closed each day at three in the afternoon and was reopened the next day at dawn. Both for the inhabitants of Constantinople and for those living outside of Byzantium's borders, Chalke epitomized power and prestige²².

¹⁰ 12th century historians Kedrenos and Zonaras attribute the name Chalke to the bronze roof tiling. However, Choniates speaks of bronze door wings (L. Brubaker "The Chalke Gate, The Construction of the Past, and the Trier Ivory", *BMGS*, issue 23, 1999, p. 258; C. Mango, *The Brazen House, A Study of The Vestibule of The Imperial Palace of Constantinople*, Copenhagen 1959, p. 21.) It is still unclear which of these interpretations is accurate. What is certain; however, is that the name Chalke was given to the structure 600 years before the records of these historians came about. During the Nika Revolt in 532, the structure was referred to by this name.

¹¹ S. Eyice, "İstanbul'da Bizans İmparatorlarının Sarayı: Büyük Saray", *STAD*, issue 3, 1988, pp. 5, 11, 12, 14.

¹² J. Bardill, "The Great Palace of the Byzantine Emperors and the Walker Trust Excavations", *JRA*, issue 12, 1999, p. 220; W. Müller-Wiener, *İstanbul'un Tarihsel Topoğrafyası*, trans. Ülker Sayın, İstanbul 2002, p. 232.

¹³ For the expansion and transformation of the Chalke Gate over time, pls. see W. Müller-Wiener *İstanbul'un Tarihsel Topoğrafyası*, trans. Ülker Sayın, İstanbul 2002, pp. 230-231.

¹⁴ Prokopios, *İstanbul'da İustinianus Döneminde Yapılar*, Book One, trans. E. Özbayoğlu, İstanbul 1994, pp. 40-41.

¹⁵ For Khristos Khalkites iconography pls. see C. Mango, *The Brazen House, A Study of The Vestibule of The Imperial Palace of Constantinople*, Copenhagen 1959, p. 135-142 and *The Oxford Dictionary of Byzantium, I-II-III*, eds. Alexander P. Kazhdan, Alice-Mary Talbot, Oxford 1991, v. I, p. 440.

¹⁶ *Ibid.*, v. I, pp. 405-406

¹⁷ C. Mango *The Brazen House, A Study of The Vestibule of The Imperial Palace of Constantinople*, Copenhagen 1959, p. 34.

¹⁸ L. Brubaker, "The Chalke Gate, The Construction of the Past, and the Trier Ivory", *BMGS*, issue 23, 1999, p. 259.

¹⁹ S. Eyice, "Aslanhane ve Çevresinin Arkeolojisi", *IAMY*, issues 11-12, 1964, p. 26.

Excavations Conducted in the Garden of Sultanahmet Eski Cezaevi (Former Sultanahmet Prison)

On 3 June, 1912, during the Ishak Paşa fire in the Cankurtaran Quarter, all the timber buildings above the Byzantine ruins burned down, and the ancient ruins were thus revealed. After the fire, the German researcher T. Wiegand and Swiss architect E. Mamboury studied the ruins visible within the Great Palace area. The work was conducted as excavations in some areas and as test pit-digings in others. Following the end of World War I, the German team left Istanbul, while Mamboury stayed behind and resumed his research. The results of the studies were published in 1934²³.

The ruins unearthed within our excavation site correspond to the drawings of Mamboury and Wiegand. Researchers referred to this area as the Magnaura Palace-Senate Building, used as meeting halls for imperial councils, as well as for audiences.

Used for audiences with foreign ambassadors and located to the east of the Augusteion, the Magnaura was built during the reign of Constantine I. The apse of the audience hall included the "Throne of Solomon", accessed by six steps and flanked by lions. The famed "automata" of Emperor Theophilos (829-842) was also located here. The "automata" was a copy of the mechanical device at Harun al-Rashid's palace. A gilded bronze tree rose before the throne and birds made of the same metal perched on its branches. Enormous lions flanked the throne²⁴.

According to Prokopios, the Magnaura was located in the same area as the Senate Building commissioned by Justinian I. It had exactly the same layout and featured the same architectural characteristics²⁵. There is no mention of the Senate Building after the reign of Justinian I, a fact which suggests that the two structures were one and the same²⁶.

The Magnaura was connected to other parts of the Great Palace and Hagia Sophia through a series of underground tunnels. Moreover, Hagia Sophia, the Magnaura and the Chalke were connected to one another by means of a portico.

In 596, Emperor Maurice (582-602) built a bath (*Lutron*) and a bridal chamber for the empress. In the chapter dedicated to wedding ceremonies in *The Book of Ceremonies*, the third day of the ceremony is described as the day of bath:

... The bath is also a ceremonious event. The Blue group assumes its post to the right of the portico, at the gate of the Augusteion. The Green group stands on the opposite side, facing their Blue counterparts. There is an organ underneath the gazebo, another one further away from that, and yet another one on the descent to the bath. Sheets, a perfume bottle, chests, and bowls are carried to the bath. The consuls accompany only as far as the entrance of the bath. As the sheets, the underwear, the perfume bottle, the chests and the bowls are carried, the consuls arrive and assume the *consistorium* (ceremonial) stance. Patrikioi (nobles) await on the other side of the pool curtain²⁷.

In the course of work conducted in the garden of the Sultanahmet Eski Cezaevi, the remains of a street have been excavated. Dated to the Byzantine Period, the 48 metre-long and 4 metre-wide street stretches in a northwest-southeast direction. Bordered by Byzantine structures on both sides, the middle section of the street features a sewage canal covered partly by vaults and partly by flagstone. From a set of spaces located in this area, a sewage system that connects to the main canal via smaller canals was created (fig. 13).

To the southwest of this street, a small *hamam* (bath) with a hypocaust (fig.12), system was discovered. Water was provided to the bath through terracotta pipes. The rectangular marble tank remains found inside the bath were used as basins. While a detailed plan of the structure



²⁰ When, in the 12th century, the Great church built in the name of Archangel Michael required restoration, Emperor Isaac II Angelos (1185-1195) ordered all the architectural pieces and bronze door wings of the Great Palace to be collected and used in rebuilding of this church, known as "Mikhaelion" and adjoining monastery. Byzantine writers Phrantzes and Ducas note that in the construction of Rumelihisari, stones from this monastery were used, which suggests that some of the gathered stones found in the walls and bastions of Rumelihisari may be remains of the Great Palace.

²¹ Constantine VII Porphyrogénète, *Le Livre des Ceremonies I-II*, trans. A. Vogt, Paris 1939, p. 84.

²² L. Brubaker "The Chalke Gate, The Construction of the Past, and the Trier Ivory", *BMGS*, issue 23, 1999, pp. 259 - 260.

²³ E. Mamboury-T. Wiegand *Kaiserpalaste von Konstantinopel*, Berlin 1934.

²⁴ *The Oxford Dictionary of Byzantium, I-II-III*, eds., Alexander P. Kazhdan,

Alice-Mary Talbot, Oxford 1991, v. II, pp. 1267-1268; D. Kuban, *Bir Kent Tarihi - Bizantion, Konstantinopolis, Istanbul*, Istanbul 2000, p. 127.

²⁵ Prokopios, *Istanbul'da Justinianus Döneminde Yapılar*, Book One, trans. E. Özbayoğlu, Istanbul 1994, pp. 24-25, 30-40.

²⁶ D. Kuban, *Istanbul Bir Kent Tarihi - Bizantion, Konstantinopolis*, Istanbul 2000, p. 108, endnote 35.

²⁷ Constantine VII Porphyrogénète, *Le Livre des Ceremonies I-II*, trans. A. Vogt, Paris 1939, p. 7-23.

12. Bath ruins identified on the southwest of the street in a northwest-southeast direction, excavated in the garden of the Sultanahmet Eski Cezaevi



13

13. Street in the northwest-southeast direction and excavated in the garden of the Sultanahmet Eski Cezaevi

believed to be the *Lutron* mentioned in *The Book of Ceremonies* and that this street is the street that connected the Magnaura and the Augusteion.

Vaulted Byzantine and Ottoman structure complex

A complex of structures that include Byzantine and Ottoman chambers and that connect to one another via corridors was unearthed in the excavation area. Encompassing an approximate area of 550 square metres and comprised of vaulted spaces, the Ottoman-Period remains (fig. 14) are designed as a covered market, possibly dating to the 15th-16th centuries. The vaulted Byzanti-

14. Remains of a structure from the Ottoman Period



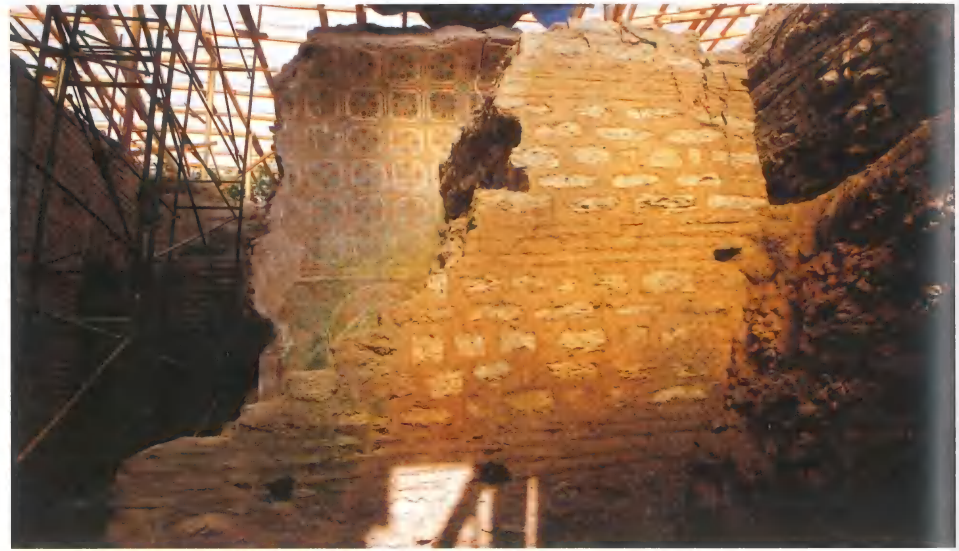
14

ne-Period structural remains, on the other hand, cover an area of roughly 400 square metres. Access from the Ottoman to the Byzantine structures is through an entrance with a semi-circular arch set on stone pylons.

Both walls of the space to the southeast of the Byzantine structure complex are frescoed. Dated to the 7th century, the fresco on the west wall features a red, cross motif on a cream-coloured background. Between the arms of the cross are stylized foliage motifs applied randomly. The fresco on the north wall, on the other hand, is comprised of green, yellow, red, and black geometric and floral motifs painted on a white background. It dates possibly to the 9th century (figs. 15-16).

The earliest architecture in this complex of structures, which underwent several repairs and annexations during the various phases of the Byzantine Period, is dated to the Late Roman-Early Byzantine Period (4th-6th century). Based on the beautiful brickwork and other characteristic features, the Byzantine section is possibly the basement of an important building. The upper sections of all the vaults in this space have been flattened like a floor. Remains of upper stories that continued above the vaults of certain chambers have been identified in this area.

A significant number of building remains have been unearthed in the course of our excavations that include a part of the Great Palace area. However, with the exception of the remains mentioned above, we currently have no information available on the function of the other structures. Apart from the scientific digs conducted under the auspices of Istanbul Archaeological Museums, a number of foundation digs are still in progress. The individual architectural remains discovered in certain plots in the course of these foundation digs do not offer a distinctive plan due to constriction of space in the work areas²⁸. Therefore, the excavations conducted in the Sultanahmet Eski Cezaevi constitute the most comprehensive archaeological digs conducted in this area since the 1950s.



15-16. Dated to the 9th century, fresco found on the north wall of the area to the southeast of the Byzantine building complex

²⁸ Since the historic Sultanahmet region is under protection, according to a decision of the Board for the Protection of Cultural and Natural Heritage, it is not permitted to access a depth of more than 3 metres. Therefore, it is not possible to reach the remain.

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FORMER
SULTANAHMET
PRISON

SC

Catalogue

SC1

Fibula

Phrygian, 8th-7th century

BC

Bronze

l: 4.7 cm, h: 3.6 cm

02.170 M (SC.01/1172)

Used as a safety pin during Antiquity, this fibula is the earliest find discovered in the Sultanahmet Former Prison House excavation. It stands out as an important example that confirms Phrygian presence in Byzantium, which was located on the trade routes.

AD, GY, ABA



SC2

Oinochoe fragment

Eastern Greek, 625-600 BC

Terracotta

l: 7.2 cm, w: 8.1 cm

01.171 ÇÇ (SC.00/136)

An *oinochoe* was a vessel used for transferring wine from a crater, a container for wine. The example seen here is an *oinochoe* sherd near the neck. The light brick fabric has a yellowish-beige slip. The fragment is ornamented with decorations painted in brick and brown. It is among the rare Eastern Greek ceramics discovered in Istanbul.

AD, GY, ABA



SC3

Kylix fragment

Greek, 550-525 B.C.

Terracotta

l: 4 cm, w: 2.6 cm

02.283 ÇÇ (SC.01/428)

A *kylix* is a kind of drinking cup. The example seen here is the body fragment of a *kylix* that belongs to the "Little Master Kylixes". It is of pinkish brick fabric, same color slip with black glaze on the interior. The exterior features the inscription "... ΠΟΙΕΣΕΝ" (work of...) in Greek. The piece carrying the beginning of the inscription is broken off and missing. Often encountered in Greek ceramics, this inscription indicates the name of the potter.

AD, GY, ABA



SC4
Dinos

Greek, 6th century BC

Terracotta

h: 17 cm, diameter of rim:

33 cm

02.331 ÇÇ (SC.01/550)

The dinos of brick fabric and a cream slip. It is ornamented with crimson and brown decorations.

The dinos was used as a wine vessel in Ancient Greece.

AD, GY, ABA



SC5

Askos fragment

Greek, 5th century B.C.

Terracotta

l: 6.2 cm, w: 4.4 cm

00.66 ÇÇ (SC.99/89)

Askos is the name given to a vessel used for pouring oil in Antiquity. The example seen here is the body fragment of an *askos*-type vessel. It is of light brick fabric with brick-coloured slip and is decorated with the red-figure technique.

AD, GY, ABA



SC6

Bowl sherd in the shape
of a fish plate

Hellenistic

Terracotta

h: 3.1 cm, diameter of
base: 7 cm, diameter of
rim: 16 cm

07.258 ÇÇ (SC.06/119)

The bowl of red fabric is coated
with black glaze. The receptacle
at the centre is used as a saucier.

AD, GY, ABA



SC7

Head of Athena

Roman, 1st century BC-1st
century AD

Terracotta

h: 14.5 cm, w: 6.9 cm

07.68 PT (SC.05/883)

The head belongs to a figurine.
Tilted backwards, it is crowned
with a Corinthian helmet.

AD, GY, ABA



SC8

Resting Hermes figurine

Hellenistic, 4th century BC
Terracotta

h: 10.8 cm, w: 5.1 cm

07.72 PT (SC.06/127)

Made of red fabric, the figurine belongs to the "Resting Hermes" category. The head is missing. Although the figure does not sport winged sandals, the way he stands and rests his foot on the rocks recalls similar Hermes figurines.

AD, GY, ABA



SC9

Bowl with double handles

Roman, 1st-2nd century
AD

Terracotta

h: 10.3 cm,

diameter of base: 6.3 cm,

diameter of rim: 14 cm

07.245 ÇÇ (SC.05/892)

The bowl has a grey fabric and it is coated with mixed-in lead. The exterior features incised decorations as well as the Greek male name "ΡΟΥΦΟ"

AD, GY, ABA



SC10**Pottery lamp**

Early Byzantine, 5th
century

Terracotta

l: 8.9 cm, w: 6.2 cm,

h: 3.7 cm

02.58 PT (SC.01/555)

The pottery lamp of brick fabric and slip. Visible below, near the tip, is an engraved cross, and, at the centre of the base, is an incised foot motif, a continuation of a Roman tradition.

AD, GY, ABA

**SC11****Pot with heating base**

Byzantine, 10th -11th
century

Terracotta

h: 15 cm, diameter of

rim: 19 cm

04.131 ÇÇ (SC.03/697)

This pot of white fabric has light-green glaze in waves. The form of the double-walled vessel and the holes on the body indicate that this is a pot with a heating base. Burning coal is placed in the lower compartment through these holes to heat the upper compartment.

AD, GY, ABA



SC12**Diptych**

Byzantine, 10th-11th
century

Bone

h: 5.5 cm, w: 2.5 cm

02.33 M (SC.01/50)

This sherd is part of a diptych. The attributes of the figure holding a brush in his right hand and a roll of paper in his left hand, which he covers with fabric, likens him to Saint Luke. On the reverse side of the plate, there is a half Latin Cross.

AD, GY, ABA

**SC13****Perfume bottle**

Byzantine, 11th-12th
century

Glass

h: 19.5 cm, diameter of

rim: 1.1 cm,

diameter: 5.2 cm

02.81 C (SC.01/1150)

The perfume bottle is made of manganese-purple glass fabric. It was discovered between the skeletons of a 25-30 year-old female and a 7-year-old child resting on her left arm. It is of particular importance as a burial find.

AD, GY, ABA



SC14

Fragment of base

Seljuk Iran, 11th-12th

century

Terracotta

9.6 x 9.7 cm

04.156 ÇÇ (SC.03/813)

The fragment of white fabric is coated with a transparent, colorless glaze. It features the depiction of a saint with a halo in three-quarters profile. It appears that the saint is extending his disguised hands forward under his garments.

AD, GY, ABA



SC15

Base sherd

Byzantine, 12th-13th
century

Terracotta

Diameter of base: 6 cm

02.301 ÇÇ (SC.01/475)

The sherd of red fabric has a white slip, and it is coated with yellow glaze. It features Jesus Christ inside a *mandorla* (almond-shaped medallion), both applied in deep and fine sgraffito technique. The shape of Jesus Christ's beard suggests a Syrian-Palestinian influence.

AD, GY, ABA



SC16

Base sherd

Byzantine, 10th-12th
century

Terracotta

Diameter of base: 6.3 cm

04.155 ÇÇ (SC.03/812 ve
SC.05/940)

The sherd of white fabric has a white slip, and it is coated with transparent, colorless glaze. The decorations are made in brown ochre, orange and pale green. The sherd features a depiction of The Virgin *Hodegetria* (she who leads the way). On her right shoulder is the star motif symbolizing her virginity. She holds Emmanuel (God is with us) Christ on her left arm. The Christ figure carries a manuscript roll in his left hand; the gesture he makes with his right hand is a sign of his worldly and spiritual attributes.

AD, GY, ABA



SC17a

Plate with depiction of a saint

Byzantine, 12th-14th century

Terracotta

h: 21.1 cm, diameter:

5.1 cm

01.210 ÇÇ (SC.00/217)

SC17b

Plate with depiction of a saint

Byzantine, 12th-13th century

Terracotta

h: 8.6 cm, diameter:

13.5 cm

02.187 ÇÇ (SC.01/1)

The plates of brick fabric and white slip are coated with yellow glaze. Saint depictions made in incised-ware technique decorate the interior.

AD, GY, ABA



SC17b



SC17a



SC18**Bowl with monogram**

Byzantine, 12th-13th
century

Terracotta

h: 7.6 cm, diameter of
rim: 10 cm

02.189 ÇÇ (SC.01/5)

The bowl of brick fabric is coated with greenish-yellow glaze on a white slip. The body of the bowl has a perpendicular spine. The interior features the monogram "A" in incised-ware technique.

AD, GY, ABA

**SC19****Flask**

Byzantine, 13th century
Terracotta

w: 10.3 cm, base: 5.1 x 5.8
cm

07.234 ÇÇ (SC.05/872)

The flask of red fabric and white slip. It is coated with a mustard-coloured glaze. The fragment features a female figure sitting cross-legged with a kerchief (?) in her hands. The depiction is made in incised-ware technique.

AD, GY, ABA



SC20a

Teapot

Byzantine, 12th-13th
century
Terracotta
h: 13.2 cm,
diameter of rim:
11.4 cm,
diameter of base: 8.2 cm
01.92 ÇÇ (SC.01/216)



SC20b

Cup

Byzantine, 13th-14th
century
Terracotta
h: 7.8 cm, diameter: 7.8 cm
02.343 ÇÇ (SC.01/613)



SC20c

Cup

Byzantine, 13th-14th
century
Terracotta
h: 8.4 cm, diameter of
rim: 7 cm, diameter of
base: 4.3 cm
02.472 ÇÇ (SC.01/Et.696)



The kettle-shaped pot and cups
are made of brick fabric with a
white slip. They are coated with
yellow glaze. They are ornamen-
ted with decorations in incised-
ware technique.

AD, GY, ABA

SC21

Fragment of base

Byzantine, 13th-14th
century

Terracotta

h: 4.6 cm, diameter of

base: 12 cm

07.254 ÇÇ (SC.06/101)

The base fragment is made of red fabric, and it is coated with a mustard-coloured glaze over a white slip. It includes a female figure, made in incised sgraffito technique, spinning wool with a spindle in her hand. Her outfit and the earrings that resemble a *pentapyrgion* (a pendant for the royal crown) suggest that she may be an empress.

AD, GY, ABA



SC22

Vase

Ottoman, second half of
the 15th century

Terracotta

h: 18.5 cm, diameter of

body: 13.2 cm, diameter of

base: 8 cm

02.8 ÇK (SC.01/11)

This Miletus-work vase of red
fabric has a white slip, and it is
coated with transparent, color-
less glaze. Underneath the glaze,
the vase is decorated with co-
balt-blue decorations and an
inscription in Old Ottoman
Turkish.

AD, GY, ABA



SC23a

Plate (with inscription)

Ottoman, late 15th-early

16th century

Terracotta

h: 4.5 cm, diameter of lip:

19 cm

99.2 ÇK (SC.98/176)



SC23b

Vase

Ottoman, 1515-1520

Terracotta

h: 16.2 cm,

diameter of rim: 9.5 cm,

diameter of body: 14 cm

02.17 ÇK (SC.01/2)

This Iznik-made blue-and-white vase with inscription is made of white fabric and a white slip. It is decorated with cobalt-blue decorations underneath the transparent, colorless glaze. The inscription on the vase reads, "*la ilahe illallah*" (God is Great), while the inscription on the plate contains the Arabic letters "lam" and "alif" interchangeably.

AD, GY, ABA



SC24a

Miniature cup

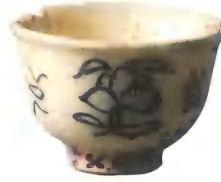
Ottoman, 18th century

Terracotta

h: 2.3 cm, diameter of

rim: 3.2 cm

02.28 ÇK (SC.01/1142)



SC24b

Cup

Ottoman, 18th century

Terracotta

diameter of rim: 7.1 cm, h:

4.2 cm

04.13 ÇK (SC.03/724)



SC24a

The Kütahya-made cups of white fabric and white slip. They are decorated with stylized light blue, red and green floral motifs underneath a colorless, transparent glaze. Their outlines are set out in black.

AD, GY, ABA



SC24b

SC25
Plate

Ottoman, second half of
the 18th century-early
19th century

Terracotta

h: 4.2 cm, diameter:

21.3 cm,

99.4 ÇK (SC.98/2)

This Çanakkale-made plate of
red fabric. It is coated with a
transparent, colorless glaze over
a white slip and is decorated
with a passionflower motif
drawn with purple-brown paint.

AD, GY, ABA



YENİKAPI

Y

Architectural finds from the Yenikapı excavations

M. Metin Gökçay*

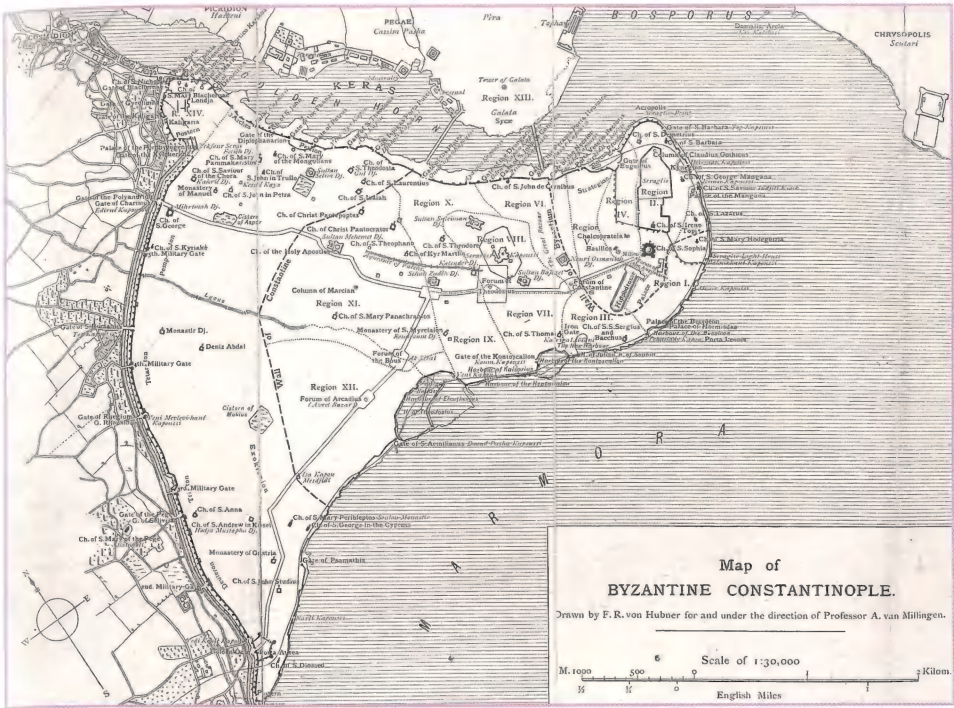
Archaeological excavations are in progress in Yenikapı under the auspices of Istanbul Archaeological Museums, as part of the Marmaray and metro projects that encompass an area of 58 thousand square metres in this quarter of Istanbul. Although there are two different projects, as the excavations continue without definite borders in the same area, the two digs are evaluated as a whole (plan 1, fig. 1). Six museum specialists, 35 independent archaeologists, three architects, three photographers, and two restorers are currently working in the ongoing excavations that began on 27 November, 2004¹. University teams, with relevant areas of specialization that support the excavation team, are working under the supervision of the excavation directorate.

While the presence of a harbor in this area is known, there are still uncertainties about its name (map 1). In earlier times, the port was named after Theodosius I (379-395 AD), who built the granaries at the port. However, as it is located in Eleutherion, the 12th Ward of Constantinople, the port is referred to as the Port of Eleutherios by Petrus Gyllius (Pierre Gilles).

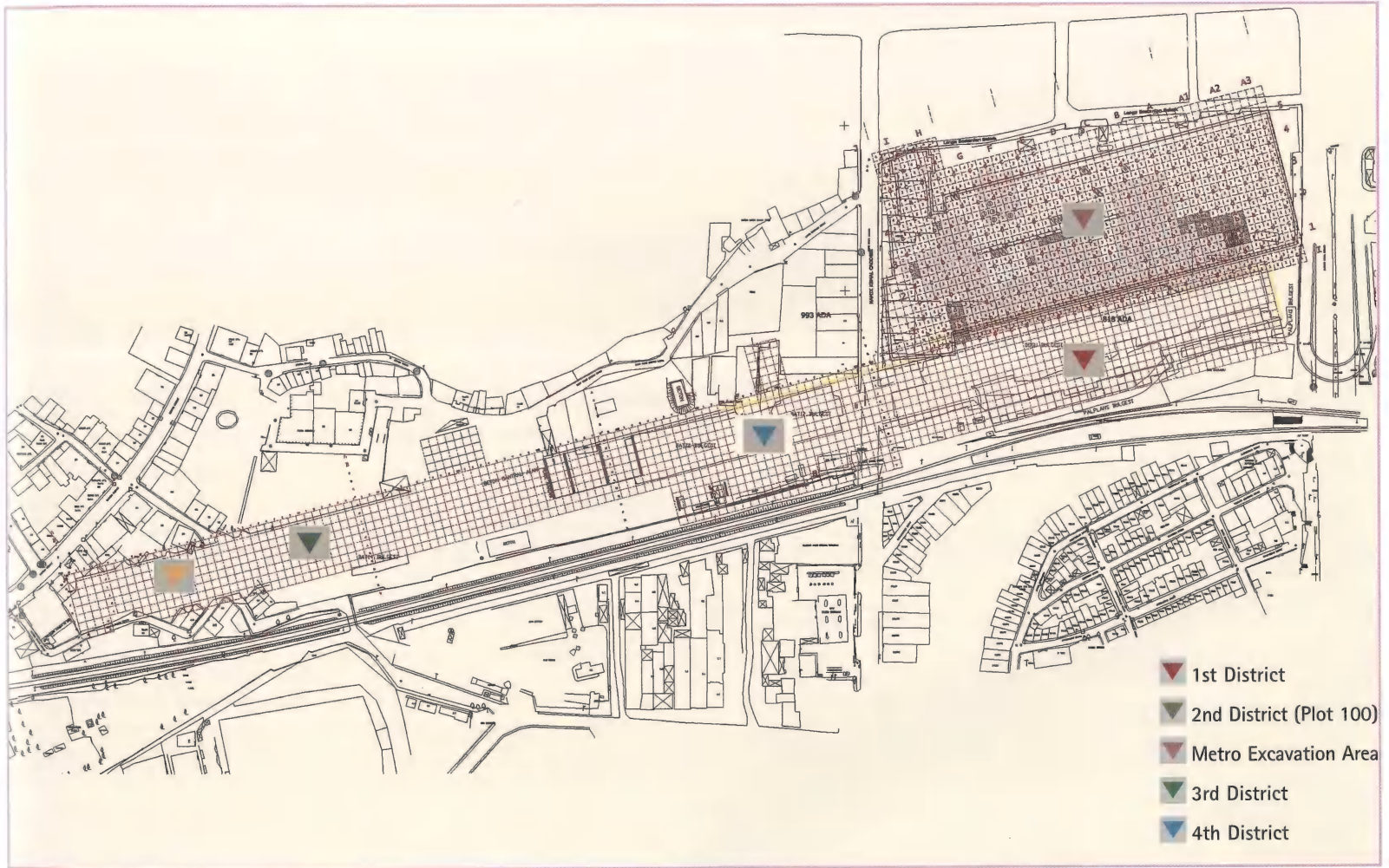
Based on my observations during the excavations, I can say that there were possibly two ports in this area. According to different sources, the mouth of the port faced east, with the Belesarius Tower (Monk's Tower) located at its far end. It is also known that the south end of the port was surrounded by a breakwater and that the aforementioned tower was located atop this breakwater. When we study the maps today, we can surmise that the breakwater stretched only as far as Namık Kemal Street on the east. Designated by our teams as the 3rd District, the thick mud layer encountered in this area, where the breakwater was located, continues until -2.50 metres, the last excavated stratum. Excavations in this area reveal that the port was silted by deposits carried from outside the area. The area located between Namık Kemal Street and Mustafa Kemal Street on its east and bordered by the railway on the south has been designated as the 1st District by our teams. As assessments of its finds and cross-sections from the ongoing excavations in this area reveal that there is a 1.5 metre-thick sand layer near the surface, immediately below the agricultural stratum encountered in all excavation sites. This indicates that this area of the harbor was completely exposed to the sea and that it silted in with sand carried by the south-wind storms. The discovery of an intact plate with black glaze and palmette motifs dated to the 4th-3rd centuries BC and similar ceramic sherds at the same le-

¹ Yenikapı excavations are conducted with the following team members: Dr. İsmail Karamut (head of excavations), Rahmi Asal (deputy head of excavations), M. Metin Gökçay (excavation supervisor); excavation committee members Gülbahar Baran Çelik, Sırrı Çölmekçi, Arzu Toksoy, İ. Halil Akman, Kürşat Kılıç; independent archaeologists Levent Yonar, Ayşe Pınar Gönüler, Ayşen Çetin, Hande Yeşilova, Kaya Uluç, Özüm Arasoğlu, Ülkü Bayrak, Ahu Çeziker, Alper Gölbaş, Burak Soy, Filiz Turan, İbrahim Halil Yalçındağ, Mehmet Ali Polat, Nihat Tekdemir, Rasim Ekim, Kahraman Şenyurt, Barış Mirzanlı, İlkay İvgin, Korhan Bircan, Murat Bircan, Seda Ülger, Yasemin Aydoğdu, Özlem Duran, Emine Dilber, Seval Usta Uzun, Funda Genç, Hasan Altun, Merve Kavalcı, Züleyha Doğan, Çağdaş Adıyeke, Damla Karaman, Emre Taştumur, Osman Çoruhlu, Mürüvvet Erdoğan, Mehmet Sağır; photographers Bekir Köşker, Sabriye Çelik, Mehmet Güngör; restorers Yurdanur Akpınar, Sema Yüksel; architects Funda Tunalı, Evrim Akcan, Ebru Harman, M. Baki Aydın, Ayten Gül Okyay, Murat Ünal, Fakir Cavlun; assistant Gülay Atılgan.

* Archaeologist.



M1



P1

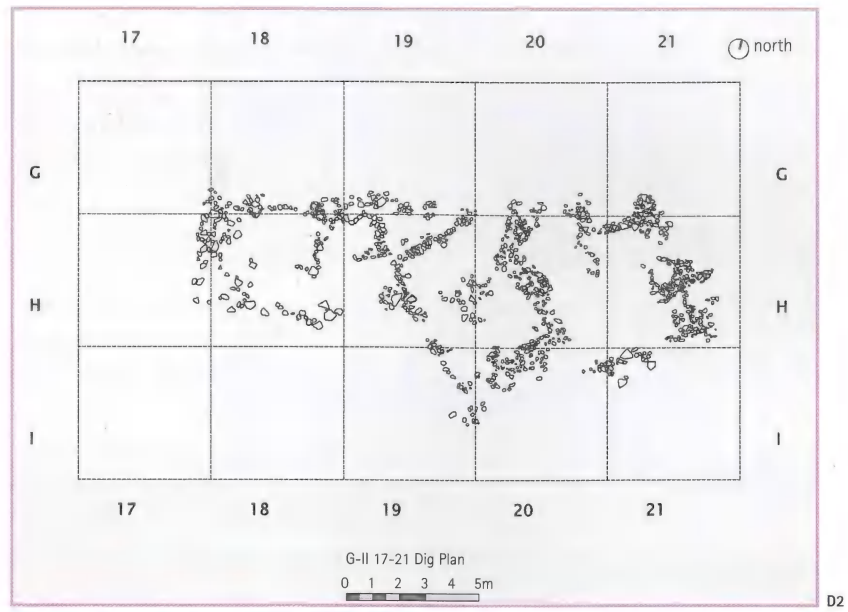
vel (approximately -3.50 metres) from the 5th-6th centuries AD confirms this phenomenon.

Through careful observation, archaeologist Mehmet Ali Polat, who worked at the north end of the 1st District corresponding to the border of the Marmaray and metro projects, found possibly Iron Age discoveries at approximately -6.00 metres - above the layer created by mollusk shells. In the course of excavation, which continued after water was pumped out from under the shell stratum, possible Neolithic finds, and immediately below, a daub-and-wattle structure have been identified. The structural plan uncovered was created by placing stones below branches and securing them with mud. The area enclosed by this structure is 9 metres wide and 20 metres long. Istanbul University's Prehistory Department Head, Prof. Mehmet Özdoğan, has identified the architecture as Neolithic (fig. 2, drawing 2).

The black soil and plant roots found beneath this stratum and immediately above the mud layer are of particular importance because they reveal this area's conditions more than 13 thousand years ago, before the Sea of Marmara was formed. The discoveries of the geologists currently working in the area will prove interesting.

The structures in the 3rd District on the west, located to the east of the area referred to as the 2nd District or Plot 100, are also intriguing. Composed of thick and closely embedded piles, approximately 43.5 metres of a jetty were unearthed during excavations. An extension at the midsection of the jetty is visible. This section, quite possibly, is part of a platform where the jetty planking extended to accommodate loading and unloading. As excavations in this section have not yet been concluded, the length of the jetty piles has not been determined.

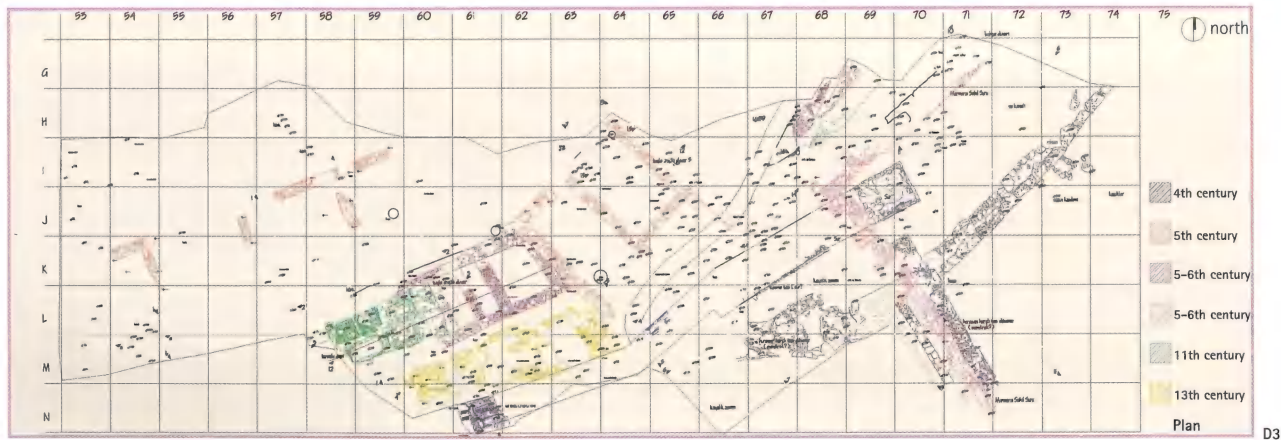




However, pile samples have been sent to Prof. Peter Koniholm of Cornell University for dendrochronological study. A timber board found on the east side of the jetty is interesting because it reveals the function of the jetty. The jetty is intercepted diagonally by a dock to its west. Constructed in a north-south direction, the portion of the dock facing the sea is constructed of large, 2.75 x 1.35 metre (?) rectangular stones in two rows. One of the stones at the rear is a marble stele from the 4th century BC. To lift and move these stones, quadrilateral holes were drilled in the stones in front. The stones on the northwest are placed in two rows one on top of another. The identified length and width of the dock is 25.50 metres and 2.80 metres, respectively. It was observed that the stones forming the dock are embedded in sand. The expansion of the seabed to the east can also be understood from

the distribution of stone anchors discovered on the seabed. While excavations in this area remain largely incomplete, it is estimated that this harbour was used frequently after the 4th century AD (drawing 3, fig. 3).

To the southwest of the dock, a mass created with small stones and grog constitutes the interior of a breakwater facing the harbour (fig. 5). From the composition of the grog and the Wall of Theodosius above it, we conclude that the breakwater was built earlier, possibly in the 4th century AD. Located to the west of the Theodosian wall and continuing behind it, a second breakwater is made with slightly larger stones set on the natural limestone rocks of the seabed. The limestone rocks appear as vertical plates, and the upper section of the breakwater is built as a smooth platform. The southwestern side faces the sea and is constructed with even



cut-stones in a single row while the western side has been bordered with similar stones. Mountings seen in the wet grog below the wall indicate that the Theodosian walls were built over the breakwater, set on wooden beams that stretched in an east-west direction (fig. 4). The Theodosian walls enclosing the western harbour were unearthed during the excavations. It is clear that the Theodosian wall which encloses this portion of the harbour and ends in a crescent shape, was made with an alternating pattern of five rows of stones and five rows of bricks. However, it was also clear that the portion of the wall surrounding the harbour and above the breakwater had less strength. The width of this part of the wall is



F4



F5

1.35 metres, while the buttressed width is 2.75 metres. Here, the height of the walls above the breakwater is 2.30 metres at most. It is also seen that the wall thickens towards the northeast and is set on vaults. On the northern portion of the wall facing the harbour, repairs from different periods can be traced.

Looking west from the harbour, the Theodosian wall turns a corner and continues toward the east. A wall made with grog and approximately 4.40 metre-wide rectangular stones, located near this corner junction and extending in an east-west direction, has been unearthed. The height of the wall from the mud layer where the foundation rests is 1.90 metres. The portion of the wall set at what was once ground level creates a step here. It appears that the cut stones from this section that remain outside and below the Theodosian wall were removed and

used, possibly in the construction of the Theodosian walls. A study of the wall reveals that, below the Theodosian wall, is a row of stones from the Constantinian walls. It was determined that, after passing below the Theodosian wall, this Constantinian wall continues, in a partially deteriorated condition, to the west for another 54 metres up to the border of the excavation area. Since the excavation area ends here, it was not possible to follow the extension of this wall. Bronze coins from the reign of Constantine I (324-337) discovered at the wall and its environs, as well as its construction technique, date the wall to the 4th century. As there are no connections between this wall and the rest of the excavations, or any other architectural structure, it appears that this is not an ordinary wall (fig. 6, map 1). In determining the borders of İstanbul, Constantine I ordered that the city be surrounded by walls.



F6

From partial maps at hand, we presume that the Constantinian walls commenced roughly around Samatya Hospital, passed through Esekapi and Findikzade, descended to Vatan Street, passed by Fatih Mosque (then the Church of Holy Apostles) past Lips Monastery, and, after reaching Yavuz Selim Hill (Petra), headed down to Fener (Pharion) on the shores of the Golden Horn. However, no fragments from this wall have ever been encountered. It is not plausible that a harbour of such strategic importance for Constantinople would be left undefended, outside its walls. Based on structural features of the unearthed wall and other finds, it is believed that the beginning of the Constantinian wall has been unearthed right here, to the west of the Port of Eleutherios, immediately behind the dock. This serves as an important starting point for the discovery of the rest of the wall in Istanbul. It has been determined that the masonry work of the Theodosian wall and its continuation features the same characteristics as the masonry work at the starting point of the wall facing south. Stone removed from its interior reveal the structure of the wall. The thick timber beams seen in the foundation have been piled one on top of another like a grid, and the interior of the wall has been reinforced completely with stones and grog. There appears a single-step entrance on the southern façade on the breakwater side, which probably opened onto the breakwater. However, it has been determined that this entrance was blocked on the west by a wall built at a later period. On the west of the breakwater side facing the sea, the Constantinian wall is intersected at two points. It was determined that this gate was for a road meandering toward the northeast and that a brick vault above it was destroyed. It also appears that it continues as a vaulted road underneath a floor with brick dust covering, known as structure no. 6. Possibly a granary, this structure is partly demolished in the area east of the continuing wall. After these vaults end, the structure continues at ground level as at its beginning.

It is believed that this vaulted structure is a secret passage and that it led to a palace once situated on the slopes of Cerrahpaşa Hill or to other important structures. As it happens, a person taking this road can access the sea from behind the breakwater without being seen from the harbour, or vice versa. The vault in the secret passage beneath the building is 1.80 metres high and 1.60 metres wide. The lower section of this vault is built with cut stones, and the upper section is built with bricks. The 16 pottery lamps discovered in this vault point to the structure's function. Lined in an east-west di-

rection are three irregular, round holes, nearly 20 metres in depth that were dug later. Stones from the Constantinian wall must have been used in the construction of the later Theodosian walls. In order to conceal the road that stretches from the south to the north as a tunnel, a building was constructed above it. The walls of the building are constructed above the Constantinian wall. The floor of this building was plastered with a brick dust mortar-screed mix. Approximately 12.30 metres x 8.40 metres in size, it has a quadrilateral plan with beveled floor edges. Here, a question springs to mind: Could this structure have been a cistern?

In order to find the answer, the structure must be studied in detail. The absence of these features would seem to indicate that this structure was not a cistern: niches on the side walls that would mitigate splashing of water in the event of an earthquake; water courses leading up to a building above as well as water outlets; a hole or a trough at the base for the accumulation of mud; and a well. Moreover, from east to west, there are 32 relatively shallow holes at the base of this structure, which were opened at a later date. Immediately south of this structure stands a neighbouring structure, the interior of which is plastered with brick-dust mortar. Although it contains a vertical column fragment and a well, it is not a cistern either. This structure was largely destroyed by a building constructed during the Republic Era. Although these structures may be believed to be cisterns, structures built on the waterfront, and not at the harbour, are not used to provide water. These structures are granaries built for cool preservation of goods arriving at the port.

To the north of these structures are two large buildings. They have a quadrilateral plan; the building on the west is set slightly diagonally in a north-south direction. It is 14.80 metres in width and 19.60 metres in height with a wall thickness of 0.55 metres. Set on limestone rocks, this building is in considerable disrepair. The base is 1.50 metres high and is constructed in limestone. Rising above it, a roughly 4.5 metre-thick wall made with 38 x 38 centimetre bricks and brick-dust mortar, reaching its highest point at 2.60 metres. There are two stone steps inside this space. The stamped *in situ* bricks on the east end as well as its construction techniques indicate that the wall is dated to the 6th century AD. Adjacent to this structure, a building on the west features the same characteristics. However, the brick-and-grog walls, the northern wall of which is set on a rectangular block of stone, is particularly interesting because it displays

the same features as a wall located during an excavation near the Little Hagia Sophia Mosque. This building is contemporaneous with the one on the east.

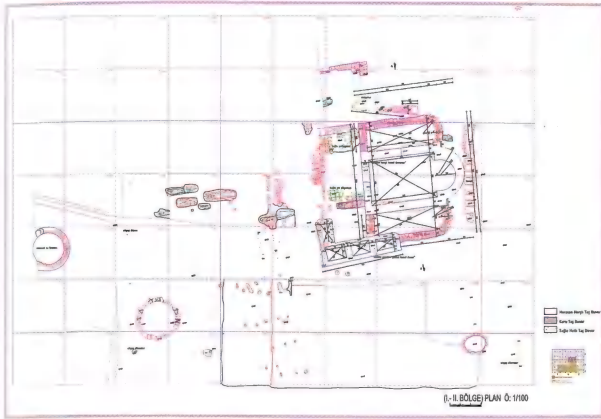
Located to the west of these two structures, a structure with a wall thickness of 0.50 metres, comprised of four 3.50 x 1.20 metre quadrilateral chambers, is a *hypogeum*. A large portion of the vault above the northwestern chamber of the four is still intact. The remains indicate that the other three rooms were covered with vaults. In terms of structure, this kind of vault is rarely encountered in Byzantine architecture; it is not formed by a circular expanse of vertical bricks toward the load-bearing walls. The vault here is created by sliding the roughly 21 x 21 centimetre, 1.5-2 centimetre-thick bricks on top of one another - like fish scales - and covering them with grog. There are no connecting doors to these burial chambers or access to them from the exterior walls. The entrances are from above; access is provided by quadrilateral apertures supported by pendent-like elements created near the points where the vault meets the wall. The burial process is completed by lowering the body from these apertures. The portions of the walls carrying the vault, which are close to the foundation, are made of stone and the upper portion is made with the "hidden-brick" technique. The floor areas of the chambers were damaged during subsequent periods. However, studies in this area reveal that the floor was covered with bricks. Bones and skull fragments from a human skeleton were discovered inside the chamber on the northwest. Eleven graves and human skeletons have been unearthed around the *hypogeum* at the upper levels of the excavation, and a horse's skeleton was discovered underneath one of the graves. Based on finds from the foundation level of this *hypogeum* and the wall-construction technique, the structure was dated to the 12th century AD. A burial chamber that carries these same features was unearthed to the northeast of the Theodosian wall and between buttresses above the wall. Inside this burial chamber, scattered and piled bones from numerous human skeletons were discovered. It is certain that the entrance to this burial chamber was also provided from above. The bones of the excavated skeletons are currently being examined by medical anthropologist Dr. Mehmet Görgülü.

A structure was discovered at the point where the Theodosian wall makes a curve overlooking the city (the north). Built entirely of neatly cut stones, which were later broken during the construction of an iron pipe for the city's water-supply network, the southern façade of the

structure facing the wall is constructed with slightly curved stones, whereas the western portion is made with flat stones. It is assumed that this mass is part of a tower. Its location to the north of the Constantinian wall, paralleling the water, leads us to think that it was perhaps a tower over a gate from the port to the city in the 4th century. As the northern part of this area remains outside of the excavation zone, it has not been excavated and thus the function of the structure can not be completely identified. Below this stone mass, in an east-west direction, a waterway running parallel to the Constantinian and Theodosian walls was discovered. This vaulted structure is estimated to be approximately 1.10 metres wide and 1.50 metres high, with a length of 10.80 metres. It is assumed that this structure is part of a sewage system. The upper portion of the vaulted structure is covered with bricks that resemble *hypogea*. The walls are built of even stones, without any jointing. The northern wall is flat, whereas the southern wall is scarped, narrowing towards the end. Although it was initially assumed that this scarp was created to mitigate pressure from flood water, later studies reveal that this sewer connects to a demolished and unused secret passage at floor level with this slope. This waterway is dated to circa 12th century AD.

Four adjoining chambers with quadrilateral layouts have been identified in the southwest area referred to as Plot 100. Numbered north to south, the chambers have the following dimensions: 1st chamber: 2.80 x 3.75 metres; 2nd chamber: 2.60 x 4.80 metres; 3rd chamber 4.30 x 3.90 metres; 4th chamber: 6.50 x 3.20 metres. The stone-made northern walls of the chambers have been completely demolished. The floor off the 4th chamber is paved with quadrilateral terracotta bricks covered with lime. It is assumed that no other walls rose above the present height of 1.20 metres and that the upper section was raised and covered by timber lean-to roofs. The floor and the walls of the chambers are covered with a thick layer of lime. Water pipes set above the walls lead us to believe that these chambers were workshops in which some sort of production was made using lime and water. We know that Jews who may have lived in this area were involved in leatherwork and that leather manufacturing, which continues to the present day, was resumed further west in Kazlıçeşme. The three circular holes discovered in the floor of the structure above the secret passage may be related to leather processing (fig. 3, drawing 3).

A church structure unearthed at the northwest section of the excavation site's metro project portion is quite interesting because it offers an idea about the port as it silted. Initially, the church was built as a single-niche chapel with a circular apse. It has a length of 9.5 metres and a width of 11.45 metres. Made with brick-dust mortar and stone, the walls seem to have maintained their original height; the upper section and the roof are believed to have been of timber. The small size of this structure and the absence of any rubble from the walls during the excavations, strengthen this view. Built with uneven stones, lateral naves with apses were added later to the north and south of the church's main cell. The northern entrance is relatively higher, its floor covered with quadrilateral bricks. Although no flooring has been discovered in any of the church's three naves, the beginning of the floor has been identified by the stones that brim over from the walls inwards. Twenty-three graves with human skeletons have been discovered inside and around the church. Furthermore, at the south of the church



structure, an "L"-shaped area of four small chambers, with 1.90 x 0.92 metres dimensions each, has been discovered. This storage area consists of three chambers in an east-west direction and another chamber annexed to the northwestern section. The thickness of the wall is approximately 40 centimetres; its upper sections were probably timber. A large earthenware jar with three handles, found in one of these chambers, further strengthens its use as a storage area. While excavations on these structures have not been completed, it is assumed that they can be dated to the 13th century AD. (fig. 7, drawing 4).

Twenty-three shipwrecks have been excavated to date. Upon completion of the excavation, a portion of these shipwrecks was delivered to Assoc. Prof. Cemal Pulak and his team and another portion to Prof. Sait Başaran and his team for drawing, removal, and conservation. To the south of the section of the port in the Metro

area, there is a space created by thick and densely embedded piles, 4.80 metres wide and 11.70 metres long, the upper pile level of which is estimated at 3.50 metres. With 64 piles discovered so far, this constituted perhaps a deepwater jetty structure (fig. 8). The fact that the front piles at the southeast end of the first row lean to the north is associated with the effect of waves created by the docking of boats. Excavations continue towards the north of this jetty. The shape of its connection to the land is to be clarified once excavations are completed. As the western end of the port remains inside the breakwater, it is filled with deposits, and thus an intense layer of wet clay has been formed on the seabed. The eastern portion of the harbour, which lies between Namık Kemal and Mustafa Kemal Streets has no breakwater in front of it and has been silted up by sand carried by the south-wind storms. According to the evaluations of Prof. Dr.



F9-10



F8

Doğan Perinçek of Çanakkale 18 Mart University Department of Geology, it is believed that a stratum created of stoneware, stones and other materials on the upper portion of the jetty was caused by a tsunami. A gold coin from the reign of Justinian I (527-565) found in the stratum on the upper portion of the piles allows us to date this stratum to the 6th century AD. (figs. 9-10). A geological research team is currently working in the area². The numerous horse skeletons as well as the camel skeleton discovered around the jetties in both areas indicate that transportation at the port was generally carried out by beasts of burden. Assoc. Prof. Vedat Onar, who conducted research on the animal skeletons, has concluded that the horses hauled heavy loads (figs. 11-12).

In the north, to the south of Langa Bostanı Street, stretched in a north-south direction, a possible quay was unearthed. In order to let larger boats dock, a wall on the north end was constructed with even cut stones. The area on the northwestern end, on the other hand, provides a landing for smaller boats. It has been observed that the north-south alignment of the quay is comprised of large masses made with small stones and grog; three of these masses have been unearthed. Immediately beside the castle north of this quay, a small gate – known to have existed above the Marmara sea walls but hidden by the building above it (527-565) and opening to the harbour was discovered. As these buildings remain outside of the construction area, this gate was not unearthed. However, our findings reveal that it is 2.45 metres wide and 2.10 metres high; the lintel, which is broken, was 35 centimetres wide and the right side is made of a 20 centimetre-wide marble. This gate was covered by a stone wall at a later date. There is a stone tower to the east of this gate. Stretching south from this gate, the road above those masses constructed with grog and small stones, ends at the quay. To the west and north of this quay are spaces created with neat, large stones, possibly to allow boats to dock. In earlier periods, boats probably docked here. Following the demolition of the buildings from the gate of the port towards the west, a portion of the Marmara seawalls were exposed. The walls turn south at the east end of Namik Kemal Street. In continuing excavations around the wall, a niche and a small well in front of it have been identified on the face of the wall facing south. It was noted that the wall is plastered occasionally. A small passage extending in an east-west direction was identified to the south of the niche. A stone-paved portion of the floor leads us to think that it was a sacred

water fountain belonging to a church to the south. The upper parts of the banquette arches on the west side of the wall appear to have been broken. During the excavations on the city side of the Marmara waterfront walls, a well filled with amphorae was discovered. Once the well was emptied, it was noted that it had been constructed on timber piles, erected vertically on the wall foundation. As the wall continued to the east, an opening, approximately 2.95 metres wide and 3.75 metres high, was identified. The front part of the opening was covered with a stone-and-brick wall during the Ottoman Period. Studies reveal that an opening of this size matches recorded gates on the waterfront walls of Marmara. It is believed, therefore, that this opening is the Langa gate. The walls continue at intervals until the gate of a small harbour identified on the east.

On the west side of this street, there is a tower on the north end of the street of the tower span. It may be that a tributary of Lycos Creek (the exact point at which it flowed into the sea has still not been determined) per-

² Kadir Has University President Prof. Dr. Yücel Yılmaz; Assoc. Prof. Oya Algan.



F11



haps flowed into the sea at this point. Layers of alluvial silts encountered in the southward excavations bring this possibility to mind.

At the south of District 1 within the Marmaray area, an Ottoman road - possibly dated to the 16th-17th centuries - was excavated. Stretching from east to west, the partially uncovered road is paved neatly with flat stones and has an approximate width of 1.40 metres. Some of the stones were numbered, marked on the plan and removed. In the event of construction of a station building, the appropriate authorities have been notified that they may wish to use these stones in suitable areas (fig. 13).

A complex consisting of a number of chambers constructed partly with clay mortar, partly with brickdust mortar, and then with cement mortar and uneven stones has been excavated in this area. At the eastern end of these chambers is a cistern, which dates possibly to the 20th century. The presence of an Ottoman road was identified at the lowest level of this complex, which encompasses an approximate area of 500 square metres.

During excavations at the lower levels, a possibly 18th century well with stone walls supported by timber was unearthed. The well was severely damaged by other structures built in later years. A medicine-bottle lid with a depiction of an enema and fragments of glass bottles reveal that the upper structures were workshops which produced pharmaceuticals or chemical materials. Moreover, a bronze statuette of Jesus indicates that these workshops were run by the Christian community. This area was filled in with rubble from the foundation of Laleli Mosque and was sold to Armenian and Greek subjects by Sultan Mustafa III in the 18th century (fig. 14, drawing 5).

The 24 shipwrecks, 7609 artifacts to be inventoried, and the architectural finds unearthed during the excavations in progress will provide crucial documentation about this most important port of the city. The conception of a cultural park and museum project for this area and the restoration and preservation of the architectural finds are promising developments for the archaeology of the city.



F13



F14

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Commerce in Istanbul and the Port of Theodosius

Rahmi Asal*

The founding of Byzantium and its strategic importance

There are a number of legends and opinions about the founding and even the founding date of Byzantium, Istanbul's historic core. The common opinion is that the city was established some time in the mid-7th century BC, subsequent to the founding of the city of Chalcedon (Kadıköy) on the opposite shore of the Bosphorus. Herodotus states that Byzantium was founded 17 years after Chalcedon¹. In the 7th century BC, there emerged two waves of colonization leading to the establishment of Byzantium. The first wave began before the first half of 7th century BC. The Ionians, and shortly thereafter the Megarans, chose suitable sites for small-scale trade and agriculture. During the second wave of colonization, on the other hand, in the mid-7th century BC, participation in trade and the trade-traffic on the Bosphorus gained importance with the expansion and development of Black Sea trade. This factor was an important motivation behind the establishment of Byzantium."² The city was located at a key point between the Black Sea and the Aegean, on a maritime line connecting Eurasia to the Mediterranean world. "Founded on this accessible transit point between Asia and Europe, the location of the city also made it possible to oversee the connection between Thrace and Bithynia."³ The location of this Megaran colony will be the most important feature that determines its glorious future.

The Archaic period: 7th-6th century BC

Rather than from archaeological data, ancient sources provide ample information about the period of the founding of the city. Today, it is agreed that the borders of Byzantium began roughly near Sarayburnu and sprawled across an area that included the grounds of the Topkapı Palace and Hagia Sophia.

This oldest part of the city has been one of its most concentrated and important cultural and commercial settlements, which explains the scarcity of archaeological data confirming the earliest commercial activities in the area. The concrete data at hand are comprised of imported ceramic finds discovered at various excavations, particularly ones at and near the Topkapı Palace and preserved in the pottery collection of Istanbul Archaeological Museums. "The majority of this imported material

¹ O. Tekin, *Eskiçağda İstanbul*, İstanbul 2005, p. 5.

² Ibid., p. 8

³ D. Kuban, *İstanbul Bir Kent Tarihi, Bizantium, Konstantinopolis, İstanbul*, İstanbul 2000, p. 17.

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originates from Attica, whereas a small portion comes from Western Anatolia"⁴. "Greek wares served as intermediaries between the professional traders and the markets of Greece. (...) The colonists themselves desired objects manufactured at Greek workshops"⁵. Such a demand was met by cities such as Athens and Corinth. In the course of the excavations conducted as part of the Marmaray and metro excavations in the area where the Port of Theodosius, – outside the city centre at that period – was located, ceramic finds have been discovered, though limited in number. It is conceivable, therefore, that these early-period finds (catalogue no. Y1) in an area where a port and its commercial activities were not known to have existed, were not here as a result of construction activities or as deposits of the Lycos River. Rather, it can be assumed that they were left behind from cargo carried by ships arriving not to trade but seeking shelter in this inlet, when they could not reach the Port of Neorion due in particular to "the difficulty which vessels coming from those regions often found to make the Golden Horn, owing to the prevalence of north winds."⁶

The Classical period (5th–4th century BC)

During this period, the fate of Byzantium was tied to the numerous conflicts in Greece, Macedonia, Thrace and, particularly, the Peloponnesian War in which Athens and the Sparta faced off in the late 5th century BC. After having accepted the protection of Athens around 439, the city sided with Sparta in 411, two years after the Athenians captured the city and began to control the Bosphorus. "During the War of Corinth (390–389), Byzantium supported the Athenians against the Spartans. Consequently, the city secured an important place in the trade network (controlled by the Athenian banker Pasion) that the Athenians established between the Aegean and the Black Sea."⁷ Despite continuous changes of alliance, the tax contribution (15 talents) Byzantium paid to the Attica-Delos Sea Union, one of the most important alliances of the period, reveals that the city had a significant income. After 409 BC, Athens collected tax by means of a control point, possibly at the site of today's Maiden's Tower, from ships passing through the Bosphorus. "Although the revenues from this transit passing were at times allocated to the ruling power of the time, due to its function as a granary and transfer area for the grain brought from the Pontus lands, port fees aside, it must have col-

lected the proceeds from the imported grain."⁸ As in the case of the 7th and 6th centuries BC, the most important archaeological data we have on Byzantium's commercial activities in the 5th–4th centuries BC, are provided by ceramic finds discovered during excavations. We know that in the mid-5th century BC, Byzantium was a prosperous city and that, as of the 5th century BC, it was already minting coins in its name. "The abundance of ceramic artifacts from this period is another proof of the city's wealth. On the other hand, studies of the commercial amphorae discovered in Istanbul clearly manifest the diversity of trade relations as well as wealth in Byzantium. Originating from Rhodes, Chios, Thasos, Lesbos, Herakleia, Cyprus and the Black Sea, the amphorae are dated between the 5th–3rd centuries BC and testify to Byzantium's trade relations with a number of places during that period"⁹. As in the 7th–6th centuries BC, adequate finds confirming trade activity at the Port of Theodosius have not yet been discovered. However, a limited number of finds from the 5th–4th century BC have been unearthed. Among these, a dish with black glaze (catalogue no. Y2) and amphorae (catalogue no. Y3) stand out as noteworthy finds.

The Hellenistic period (4th –1st century BC)

The attacks of King Philip II of Macedonia were averted in 340–339 BC, but Byzantium and its environs were greatly damaged in the process. "Yet, the city was able to preserve its independence and, due to its fertile lands, the proceeds from tuna fish, and particularly the grain trade, which was vital for the sustenance of the Aegean, it soon reassumed its former place in the Pontus region."¹⁰ Collecting tax from the Bosphorus trade was not only one of the sources of wealth for Byzantium, it also led to tension and subsequently to war with its neighbors and other powerful cities and states. Nonetheless, the city maintained its independence for a long time during this period and continued to prosper. Following Rome's invasion of the Aegean-Pontus region during the 2nd century BC, Byzantium came under the rule of Rome in 146 BC. During this period, trade activities continued at the city's two ports, Neorion and Prosphorion. The change was that inexpensive grain brought from Egypt began increasingly to rival its Pontus counterpart. Archaeological finds are not in direct proportion to the size of trade in this period. However, as mentioned, Byzanti-

⁴ A. Pasinli, *Byzantium'da bulunmuş Yunan Seramiği*, 1995, p. 91.

⁵ G. Chester Starr, *Antik Çağda Deniz Gücü*, trans. Gürkan Ergin, Istanbul 2000, p. 13.

⁶ A. V. Millingen, *Konstantinopolis*, Istanbul 2003, p. 32. (Citation taken from (*Byzantine Constantinople*, Adamant Media Corporation, 2001, p. 268)

⁷ R. Mantran, *İstanbul Tarihi*, trans. Teoman Tunçdoğan, Istanbul 2001, p. 21.

⁸ W. Müller-Wiener, *Bizans'tan Osmanlı'ya İstanbul Limanı*, trans. Erol Özbek, Istanbul 1998, p. 3.

⁹ A. Pasinli, *Byzantium'da bulunmuş Yunan Seramiği*, Istanbul 1996, p. 92.

¹⁰ W. Müller-Wiener, *İstanbul'un Tarihsel Topoğrafyası*, trans. Ülker Sayın, Istanbul 2002, p. 17.

on maintained commercial ties with all the surrounding cities. The amphorae from Rhodes, Chios, Thasos, Lesbos, Herakleia, Cyprus and the Black Sea confirm these ties. As noted, the old ports were the areas from which the main trade activity of the city was conducted during the Hellenistic period. The area, where the Port of Theodosius was located, maintained its earlier status. The scarcity of finds from the excavation area supports the lesser status of this port (catalogue no. Y4)

The Roman period (1st century BC– 4th century AD)

Byzantion became "Civitas Foederata", a city allied to Rome, as early as 146 BC and eventually became part of the Roman province of Bithynia founded in 74 AD. The city suffered considerably from taking sides during the internal conflicts of Rome in this period. Having sided with Pescennius Niger during the struggle for power between Septimus Severus and Pescennius Niger in 193, the city was besieged following Septimus Severus' victory. Following the three-year siege, famine sapped resistance, and the city was captured, demolished and assigned to Perinthos. "Although the extent of destruction is not entirely known, due to the geopolitical significance of the city, Septimus Severus began rebuilding the city with the help of his son Caracalla."¹¹ The city walls were extended during this period. The construction of the Hippodrome and the Zeuxippos Baths commenced. Though not on a par with Ephesus, Pergammon, Miletus, and Attaleia in Asia Minor, Byzantion was an important and prosperous commercial city, particularly during the period prior to its destruction in 196. "An inscription tablet dated to the year 75, discovered at the Ephesus excavations includes a decree, which states that in all the exports and imports carried out over the sea within the borders of Byzantion and Chalcedon, 1/40th of the value of the goods is to be paid as duty."¹² It can be concluded that subsequent to the city's destruction in 196, its commercial activities were also significantly reduced. It is believed that following a conclusive assessment of the new finds from the excavation conducted by Istanbul Archaeological Museums in Sultanahmet, Yenikapı, Sirkeci and Üsküdar, this subject will be further clarified. Based on the limited number of finds from the excavations at the Port of Theodosius (catalogue no. Y5, Y6) and relevant studies, the use of the area in 1st-3rd centuries' sea trade appears similar to the

Classical and Hellenistic periods. However, a bronze coin minted in Amorium during the reign of Emperor Geta (209-212 A.D.) stands out as an important discovery. By the 4th century, the city's fate was altered completely.

Constantinople (4th–7th century AD)

The 3rd and 4th centuries were a period in which the Roman Empire was preoccupied with internal riots and barbarian attacks. Rome, the capital of the empire, was under both internal and external threat. Furthermore, the economic and cultural centre of the empire had shifted to the East, and it had become extremely difficult to rule this expansive territory from a Rome which was in decline. In the quest for a new capital, Byzantion came to the fore with its strategic location. "In terms of politics, the city had an invaluable position with respect to fighting the external enemies. In terms of economics, moreover, it stood at the centre of trade between the Black Sea, the Aegean and the Mediterranean. And in terms of culture, it was in close proximity to some of the most outstanding centres of the Hellenistic civilization."¹³ When he eventually assumed power in 324, Constantine began the transfer to the new capital. After rapid and extensive development, he inaugurated his new capital on May 11, 330.

"Like Rome," the new capital "benefited from a number of exemptions and privileges. Rome's right to receive gratuitous wheat from Egypt was expanded to include the new capital"¹⁴. By extending many privileges and benefits, a significant number of senators and statesmen were tempted to move to the new capital. Many elite families from other cities were granted land for construction. Furthermore, the population of the city was increased through legalizing the distribution of free bread to those who built houses within a certain time frame. Such incentives bore fruit, and the population of the city reached 200,000. The New Rome, or the duly named Constantinople after its eponymous founder, developed and expanded, incontestably assuming first place among the empire's great cities. In later years, "although the Western state fell out of the hands of the central government, the Eastern world, which had the strength of the Greek cities to survive, would flourish as the Byzantine Empire, ruled from Constantinople."¹⁵

"As the capacity of the old ports soon fell short vis-à-vis the rapid increase of population in the newly estab-

¹¹ D. Kuban, *İstanbul Bir Kent Tarihi, Bizantion, Konstantinopolis*, İstanbul, İstanbul 2000, p. 8.

¹² O. Tekin, *Eskiçağda İstanbul*, İstanbul 2005, p. 35.

¹³ H. D. Yıldız, "Bizans Tarihi", *Anadolu Uygarlıkları Ansiklopedisi*, v. 3, İstanbul 1982, p. 435.

¹⁴ M. V. Levchenko, *Kuruluşundan Yıkılışına Kadar Bizans Tarihi*, İstanbul 1999, p. 11.

¹⁵ G. C. Star, *Antik Çağda Deniz Gücü*, İstanbul 2000, p. 78.

lished city, during the reign of Emperor Julian (361–363) construction of a new and larger port commenced at a bay of the city that faced the southern shore of the Sea of Marmara.¹⁶ Rebuilt by Justinian II (565–578) after the great fire of 465, the Port of Julianus was renamed for the Empress Sophia and was known as the “Port of Sophia” after this date. “A second port named Portus Theodosiacus (Port of Theodosius) was possibly founded by Theodosius I (379–395) in the 12th Ward, in a bay that formed a considerable and deep indentation into the shoreline.”¹⁷ (fig. 1). “As it can be inferred from the name “Horrea Alexandriana” given to the granaries located on the east end of the port’s 9th ward, the Port of Theodosius was possibly conceived as the place to unload grain imported from Egypt.”¹⁸ Although there are conflicting ideas about the name and founding of the Port of Eleftherios, which ancient sources place in the same area, it was probably the precursor of the Port of Theodosius, and its establishment coincided with the reign of Constantine I. The pre-Theodosius stonework finds and coins (catalogue no. Y7) from the western end of the excavation area where the early port was located, support this view.

In his work, *The Antiquities of Istanbul*, French naturalist and traveller Petrus Gyllius (Pierre Gilles), who lived in Istanbul between 1544 and 1547, describes the Port of Theodosius as follows: “The Port of Theodosius was in the same place where the gardens that are now called the Blancha stand at present. These gardens are enclosed by a wall and are situated on a plain adjoining the shore of the Propontis at the foot of the sixth hill. The mouth of the port stood eastward, from which the pier extended westward. (...) The pier was twelve feet thick; and – as I found by walking it – it was six hundred of my paces long. (...) The gardens are very spacious, abound with greens and pot herbs but have very few fruit trees. As Fabius has said, fruits, not sails, hang from the trees (...) These gardens are watered by pools that they have in them and that are the remains of the old port.”¹⁹ According to the general opinion, as stated above, the port depicted by Petrus Gyllius as such, was founded by Theodosius I in the 4th century AD. “Following the period of development from the 4th century on, Constantinople became the Roman Empire’s centre of economic activity and replaced the former centres. Eastern Mediterranean maritime trade was organized around Constantinople.”²⁰ (fig. 1)

The excavations organized by the Istanbul Archaeological Museums team as part of the Istanbul metro and Marmaray projects in Yenikapı, in the area of the Port of



1. Trade routes

¹⁶ W. Müller-Wiener, *Bizans'tan Osmanlı'ya İstanbul Limanı*, trans. Erol Özbek, Istanbul 1998, p. 8.

¹⁷ Ibid.

¹⁸ Ibid., pp. 8, 9.

¹⁹ P. Gyllius, *İstanbul'un Tarihi Eserleri*, trans. Erendiz Özbayoğlu, Istanbul 1997, pp. 188–189. (Citation from *The Antiquities of Constantinople*, Italika Press, June 1986, p. 201)

²⁰ Y. Vitaliotis, “Seaports Through the Ages”, *Journeys on the Seas of Byzantium*, 1998, p. 10.

Theodosius over the last three years have revealed many clues about commercial activity at the port. Before these excavations, apart from ancient texts and other works based on them, we had no solid information about the port. The finds soon began to confirm the written sources. Apart from rare finds from the early period (6th century BC-3rd century AD) which do not point to any regular commercial activity, the 4th century emerges as the earliest period in which there is a significant increase in artifacts. The location of the early port is based on these finds, along with 4th-century walls discovered in the area, west of Namık Kemal Street. Finds from the 4th to the 8th centuries have been unearthed in this area, yet the majority is dated to the 6th and 7th centuries. The 8th-century artifacts have generally been identified toward the eastern part of the area. Finds from the 4th-7th centuries include North African plates with red slips (catalogue no. Y8) and pottery lamps (catalogue no. Y11), as well as Eastern Mediterranean and African commercial amphorae (catalogue no. Y6, Y16), Anatolian and Balkan pottery lamps (catalogue no. Y9, Y15), an Aegean amphora (catalogue no. Y5) and impressed-decoration wares (catalogue no. Y10). Apart from these, a ware with a picture of a Caucasian or Asian human face (catalogue no. Y24), a game piece from Northern Europe (possibly of walrus tusk) (catalogue no. Y21) and a terracotta pipette (catalogue no. Y22) used for decanting wine from amphorae are among the interesting finds from this period. These finds confirm Constantinople's commercial ties with the majority of Mediterranean port cities and the Black Sea from the 4th century onwards. Commercial activity with the Black Sea had been under some form of central control since the founding of Byzantium.

The Mediterranean, on the other hand, was conceived as a "Byzantine Lake"²¹ during the early Byzantine period, particularly in the 5th and 6th centuries. Byzantium's strong hold over the Mediterranean during this period was naturally reflected in its trade. As the capital and a foremost trade centre, the commercial activities of Constantinople were clearly affected by this naval power. The overwhelming number of amphorae discovered at the excavations and the diversity of finds such as glass, metal, ivory, and leather (sandals) can be regarded as proof of this rebirth. Among the 6th-7th century amphorae, the ones labeled as Yassı Ada Type 1-2 constitute the majority (catalogue no. Y1, Y20)²². The distribution of this kind of amphorae is quite wide; they have

been identified at the centres of the Mediterranean, Aegean and Black Sea. Apart from smaller finds, other evidence dating the use of this particular harbour is a shipwreck excavated during the digs and dated by Assoc. Prof. Cemal Pulak's first estimates to the 7th century. When the excavation and documentation work on the shipwreck is completed, more detailed and satisfactory information will be available.

In light of this data, we can argue that in the 4th-7th centuries, Constantinople conducted flourishing trade relations with a number of ports in the Mediterranean, Aegean and the Black Sea through the Port of Theodosius. As regards the trade goods, we can say that they included almost everything that a large city needed. "The most important commodity must have been the grain imported from Egypt with special fleets allocated to this job."²³ "Apart from grain, local ports must have received construction materials in large quantities throughout these periods: marble from the island of Prokonnesos, structural lumber from the Pontos Mountains, and an abundance of bricks. In all, there must have been a wide spectrum of trade goods brought in from the East and the West. Apart from the goods that locals needed, luxury items, foods, raw materials for local production, and even live cargo (such as pilgrims and slaves) were transported. In fact, according to famous sources, among the goods sent to Constantinople were wild beasts."²⁴ Excavated during the digs, an entire camel skeleton, identified by Veterinarian Assoc. Prof. Vedat Onar to be 8-10 years-old and of African origin, constitutes an example of livestock traded at the port.

7th-11th century AD

"Following the decline of Byzantine power at sea as a result of the Arab conquests in the 7th century, all the ports in Syria, Palestine, Egypt, and North Africa became subject to the control of the Arabs."²⁵ "Dominating the international trade system of the period was closely linked to dominating the Mediterranean. The Byzantine Empire was the leader in Mediterranean trade for quite a long time. Due to its convenient, geographical juxtaposition between the East and the West, it served as a transit trade centre for Eastern goods. Furthermore, it was able to export industrial and agricultural products across its expansive lands and attracted goods with its sizable markets."²⁶ However, as stated above, after the conquest

²¹ N. Balaska-N. Selenti, "On the Trade Routes", *Journeys on the Seas of Byzantium*, 1998, p. 55.

²² Catalogue no: 14-15.

²³ W. Müller-Wiener, *Bizans'tan Osmanlı'ya İstanbul Limanı*, trans. Erol Özbek, İstanbul 1998, p. 17.

²⁴ Ibid.

²⁵ Y. Vitaliotis, "Seaports through the Ages", *Journeys on the Seas of Byzantium*, 1998, p. 12.

²⁶ N. Balaska-N. Selenti, "On the Trade Routes", *Journeys on the Seas of Byzantium*, 1998, p. 55.

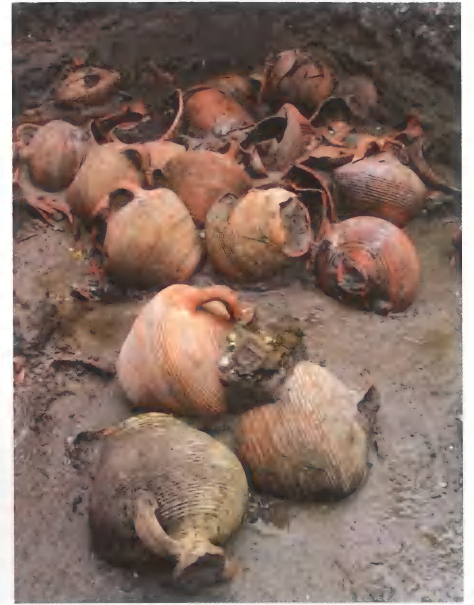
of the eastern states of the empire by the Arabs, Byzantium's reign over the Mediterranean came to an end and the empire was obliged to share Mediterranean trade profits with the Arabs. Consequently, commercial activity in this region was considerably weakened. Paralleling an overall recession within the empire, changes began to occur in commercial activity within the capital, particularly with respect to those regions with which Constantinople interacted. By then, the centre of commercial activity had become Greece and the Black Sea. "Consequently, İstanbul developed as a colossal port and the Eastern trade of the empire fell into the hands of Trabzon."²⁷

Despite developments in the 7th century and the loss of one of its most significant functions when grain imports from Egypt ceased after its Arab conquest, the port did not shrink into a small port for fishermen, as indicated in some sources. This view may be somewhat justified given the decrease in 8th century artifacts. However in the ensuing years, following the shift of the empire's commercial activity to the north for the reasons stated earlier, the port must have maintained significance. If nothing else, it maintained its importance in direct proportion to the increase in Constantinople's importance in commerce. Although they have not yet been completed, the data from the excavations support this view. Subsequent to the infilling of the west end of the port, it is believed that functioning areas moved towards the east. The frequency of 8th-century materials on the eastern side of the harbour supports this view. Materials from the 8th century have also been encountered on both the eastern and western sides of Namik Kemal Street, which separates the port area into two sections (catalogue no. Y23).

Due to an interruption in Mediterranean trade, both the diversity and number of finds uncovered in the area were reduced. The preliminary assessment of the finds reveals that the 8th century was a period of transition for the commercial activity of the port and for Constantinople in general. However, in the 9th century, the empire and, by extension, Constantinople recovered from the Arab conquests and trade revived as a result. In fact, in contrast to the scarcity of finds from the 8th century, there is a significant increase in the number of finds from the 9th century, continuing through to the 12th century. It is also established that Byzantium's revival under the rule of the Macedonian Dynasty in the 11th century is an important factor in the revival of trade.

Despite the increase in the number of finds from the 9th to the 11th centuries, we do not see the diversity of the 6th-7th centuries. The reason behind this may be the fact that commercial activity was predominantly confined to the Black Sea, Greece and the Balkans. However, as indicated by a possibly-Syrian brick fragment (catalogue no. Y26) with four lines of inscription in Greek found in the excavations, there was still a commercial tie, although probably limited, with the Eastern Mediterranean. The majority of the finds from this period is comprised of amphorae (catalogue no. Y27) with short necks and bul-

2. Area where Marmaray 1 shipwreck was discovered, with amphorae
3. Ganos amphorae



2-3

²⁷ Ibid.

ging bodies, as well as glazed and impressed-decoration wares (catalogue no. Y25).

The rescue excavation conducted as part of the Marmaray and Istanbul metro projects produced the most important group of finds unearthed to date, some 24 Byzantine shipwrecks discovered between the depths of -0.70 and -1.60 metres. Of the 24 wrecks, excavation on eight has been completed through the meticulous work of archaeologists from the Istanbul Archaeological Museums as well as independent archaeologists on the excavation team. Four of the excavated shipwrecks have been documented and removed by Texas A&M University faculty member Assoc. Prof. Cemal Pulak and his team. Four additional shipwrecks have been documented and removed by Istanbul University faculty member Prof. Sait Başaran and his team. Excavations are still in progress on two other shipwrecks. Of these 11 shipwrecks, the periods of which have been identified, only one has been dated to the 7th century according to the initial calculations²⁸. With the exception of the two shipwrecks - the excavation and documentation of

which continue - dated to the 9th century, all other shipwrecks have been dated to the 10-11th centuries. Three of the shipwrecks have been unearthed with a portion of their cargoes intact. One of these is the 10th-11th century trading vessel first identified on site and named "Marmaray I"²⁹. This ship's cargo is comprised of Ganos amphorae from this period (figs. 2-3). The other shipwreck, referred to as "Marmaray III," is also a trading vessel from the 10th-11th century³⁰. In the course of the excavations, a large number of bricks and tiles were discovered around this shipwreck. The smallest shipwreck discovered with its cargo is dated to the 9th century³¹. A coin found during the excavation has been instrumental in dating this shipwreck. Referred to as "Marmaray VI," this vessel has been discovered with its amphorae and kitchen utensils (figs. 4-5) on board. With one exception, the dated shipwrecks are merchantmen from the 9th-11th centuries. This points to an increase in commercial activity at the port during this period. As mentioned above, the increase in discovered small artifacts supports this view.

²⁸ The shipwreck, which has not yet been excavated, is dated to the 7th century AD by Assoc. Prof. Cemal Pulak.

²⁹ The documentation and removal of the shipwreck has been conducted by Assoc. Prof. Cemal Pulak and his team.

³⁰ The documentation and removal of the shipwreck has been conducted by Prof. Sait Başaran and his team.

³¹ The documentation and removal of the shipwreck is being conducted by Prof. Sait Başaran and his team.



12th–14th century AD

Despite its revival in the 11th century, Byzantium lost its naval supremacy by the end of that century. "This supremacy – both in terms of trade politics and strategy – was taken over by the Italian city-republics."³² "In the eleventh century, there commenced a decisive movement by the merchant marine of the Christian West to establish its dominance over those of Byzantium and Islam in Mediterranean maritime shipping and commerce."³³ Previously (from the end of the 9th century onwards), Russian, Bulgarian, Amalfian (the first Italian merchants to arrive in the capital in the 9th century), Pisan, Genoese, and Venetian merchants (who arrived in the 10th century), had already acquired various trade privileges and settled on the Golden Horn. As of the 11th century, these merchants had gained control of almost all commercial activities by the use of these trade privileges. Due to the system regulating commerce, the location of the centres of financial life in these foreign districts with their more suitable physical conditions, commercial activity shifted towards the area where the old ports were located, namely the entrance to the Golden Horn and Unkapanı further west. At the same time, we can say that the ports on the southern shore of the city lost their importance by comparison. A study of the limited number of finds from the 12th–14th centuries discovered during the excavations at the Port of Theodosius and the cultural stratum in which they are located reveals that the harbour was largely filled in by the 12th century and that it was no longer a commercial port. Travellers visiting Istanbul in the 15th century note that the harbour area had become a vegetable garden.

General and daily commercial activities at the port

So far, no architectural finds offering detailed information about the layout of the port have been uncovered by the excavations. Therefore, there is no precise information on how commercial activities were conducted at the port. Nonetheless, based on general architectural approaches and activities within the Byzantine Empire, it is possible to reach certain conclusions about the Port of Theodosius.

The Byzantine Empire's commercial organization was based on guilds and conducted under the strict su-



4. [opposite page] Cargo of Marmaray 6 shipwreck

5. Marmaray 6 shipwreck

6. Detail from the cargo of Marmaray 6 shipwreck

³² G. Ostrogorsky, *Bizans Devleti Tarihi*, Ankara 1986, p. 330.

³³ J. H. Pryor, *Akdeniz'de Coğrafya, Teknoloji ve Savaş Araplar, Bizanslılar, Batılılar ve Türkler*, İstanbul 2004, p. 139. (Citation from *Geography, Technology, and War: Studies in the Maritime History of the Mediterranean, 649–1571*, p. 135)

pervision of the state, so commercial activities at the port were, without doubt, subject to close surveillance. "Although they resembled the *collegia* of the Great Roman Empire, the largely transformed guild organization during the Byzantine period constituted the core of economic and commercial life. Founded to meet the needs of the court, the military and the public, this organization was also designed to protect the interests of the craftsmen and merchants."³⁴ "There were at least 23 guilds at the capital alone."³⁵ The state conducted its relations with the guilds through the governor/eparch (*eparkhos*), who was its representative in the city. The governor had absolute authority over all the guilds, the general public and foreigners living in the city. He would control commerce, production, exports and imports, and supervise the activities of foreigners. To oversee all these activities, he had a large organization at his disposal. "His deputies (*legatarios*) were obliged to inspect all kinds of goods, enforce the regulations and collect tax from guilds; they would also check if the eparch's decrees were fulfilled by the guild members."³⁶ Each guild was allowed to select its own president, but the selected member had to be approved by the eparch. "The prices that the eparch would determine with the guilds would often be low. But sometimes, the goods could be overpriced. No matter what, the prices would be fixed everywhere. No one was allowed to sell his/her goods for more than the determined price. Otherwise she/he would be required by law to pay a high fine."³⁷

This general trade system dominated a flourishing maritime trade conducted first across the entire Mediterranean and then, after the Arab conquests, with Greece, the Balkans and the Black Sea. Ships brought spices, ivory and jewels from India and Persia, silks from China, grain and cotton from Egypt, and gold, silver, fur, leather goods, honey, beeswax, caviar and grain from Russia to Constantinople. In the same way, apart from wine and fish (which were not considered luxury goods), pottery lamps, bread stamps, metal objects (such as weights and measures), textiles and liturgical objects, such as patens, chalices, crucifixes, censers, relics and diptychs (catalogue no. Y17), were exported from the capital. Most of the goods arriving at the capital were raw materials. Almost entirely imported from the East, very little was sent to the West. Beginning with luxury goods such as silk, all sorts of precautions were taken to ensure that production remained in the city. For instance, "Each Venetian ship arriving at Constantinople in the 10th century was obli-

ged to pay 2 *nomismata* in tax, whereas the ships that left with cargo were required to pay 15 *nomismata*."³⁸

An important part of Constantinople's maritime trade and apart from its grain-oriented activities during the initial years, the Port of Theodosius may have been a port through which exchanges of goods were finalized. The numerous intact and fragmented amphorae discovered in the excavations indicate the intensity of the wine and olive oil trade. The difficulty of preserving organic materials may explain why such finds are not in larger quantities. Nonetheless, more than one bone and wooden comb, ivory objects (catalogue no. Y12, Y13) and leather sandals excavated during the digs may be seen as concrete proof of the trade in such materials. Indeed, it is known that ivory, which was brought to Constantinople as raw material, was processed here, and that wood and leather workmanship was far advanced in the city.

When we look at the ships that carried these goods to the Port of Theodosius, and by extension to the city, and their subsequent transfer to other ports, we notice that they are relatively small in comparison with the vessels used during the Roman Empire. This is also evident in the shipwrecks excavated from the port. "There may be several reasons behind the change in size. The shorter distance between the grain centres and the new capital at Constantinople, a decrease in population due to wars and the plague, and the transition from state-owned ships to privately-owned merchantmen may be some of the foremost reasons behind this change."³⁹

The rules and regulations for the ships and their crews were determined by the Rhodian Sea Law. When these ships appeared at the entrance to the port, a large crowd would congregate along the main dock. Most of the curious onlookers were anxious to see the incoming merchants and their goods. Porters and sailors would gather around the ships to carry the goods to the counters of the granaries along the quay. The job was carried out swiftly and carefully, for a portion of these goods was valuable, and certain products, such as wine, were transported in fragile containers. Used for storage and transportation, these containers were *pithoi* and *amphorae*. Found in a variety of shapes, most of the amphorae were stamped. "The stamps played an important role in the social and commercial life of Byzantium. They came in different sizes and shapes and included places of production, names, monograms, and words from well wishers."⁴⁰ The amphorae discovered in the excavations contain numerous stamps in various sizes and content (catalogue no. Y20).

³⁴ I. Demirkent, "12. Yüzyıla Kadar Bizans'ta Loncalar", *Bizans Tarihi Yazıları*, İstanbul 2005, p. 159.

³⁵ T. Tamara, Rice, *Bizans'ta Günlük Yaşam*, trans. Bilgi Altınok, İstanbul, p. 148.

³⁶ I. Demirkent, "12. Yüzyıla Kadar Bizans'ta Loncalar", *Bizans Tarihi Yazıları*, İstanbul 2005, p. 165.

³⁷ Ibid., p. 171.

³⁸ Ibid., p. 168.

³⁹ T. Turanlı, "Kaptan Georgios ve Gemisi", *Cogito*, issue 17, Bizans, İstanbul 1999, p. 226.

⁴⁰ H. Y. Bilgi, "Bizans Dönemi Küçük Sanat Eserleri", *Bizans'ın Mor Binyılı*, İstanbul 1999.

Inspection and duty procedures for ships entering the port were conducted at the granaries under the supervision of the port director. While some goods would be taken to the port market or the forum, others would be carried away to distant markets by caravans."⁴¹ Life was difficult for those who worked in the exchange centre of the port; carrying, loading, and unloading cargo from and to shops on narrow streets was no easy task. We know that animals were often used for this process. Excavated during the digs and identified by Veterinarian Assoc. Prof. Vedat Onar as having been used to haul heavy loads, horse skeletons verify the use of these animals as beasts of burden. During this intense work tempo, if they had nowhere else to go, merchants, sellers and passengers would stay overnight at inns or lodging houses near the harbour. Food at the inns was often simple with quantities of fine wine and fresh fish. Rich merchants, ambassadors, and imperial officers, on the other hand, were accommodated at better inns.

The most important currency of commercial activity was, naturally, the leading monetary unit of the period - a gold coin known in Latin as the *Solidus* and in Greek as the *Nomisma*. For nearly 1000 years from the 4th cen-

tury until the period in which the Italians gained power in Constantinople, the *Nomisma* preserved its value, only to be replaced at that point by the internationally-accepted Italian *Grosso*. Another important commercial device was certainly the system of weights and measures. "During the Byzantine period, equal-arm balances and steel-yards were used as scales. As the equal-arm scale was accepted as the symbol of justice, its use was sanctioned by law" (catalogue no. Y14)⁴². Used to measure heavy loads, the steelyards were common between the 5th and 7th centuries. A typical steelyard weight was discovered during the excavations. Dated to the 6th century, the weight was used during commercial transactions at the port and is depicted as the bust of Athena (catalogue no. Y18). A similar example was discovered at the Yassiada shipwreck. The weights often carried depictions of goddesses or empresses, which symbolized fairness, honesty, and trustworthiness for buyers and sellers.

In conclusion, as mentioned in the preceding pages, upon the completion of the excavations and the assessment of the data and documents obtained, more information will be available on the Port of Theodosius and its commercial activities.

⁴¹ Stavroulaki 1998, p. 27.

⁴² H.Y. Bilgi, "Bizans Dönemi Küçük Sanat Eserleri", *Bizans'ın Mor Binyılı*, İstanbul 1999, p. 59.

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Istanbul University Yenikapı Shipwrecks Project: Documentation, lifting, conservation and reconstruction

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Archaeological excavations conducted by Istanbul Archaeological Museums at Yenikapı where the Metro and Marmaray stations will be built have uncovered 34 shipwrecks dated to the Byzantine period. The documentation and lifting of 24 of these shipwrecks and the conservation-restoration and reconstruction projects of 28 wrecks has been undertaken by a team from Istanbul University's Department of Conservation and Restoration supervised by Prof. Dr. Sait Başaran and Dr. Ufuk Kocabaş as the field director.

The area currently referred to as *Langa Bostanı* (Vegetable Garden) was once the Byzantine port (*Portus Theodosiacus*), which was 1.5 km away from the today's shoreline¹ (fig. 1) and is known to have filled in with silt from the Bayrampaşa River (Lycos). Some of these ships seem to have been abandoned when their useful life ended. Others appear to have sunk as a result of a violent storm from the south. This "lodos" (prevailing south wind) storm – commonly known as "furtive" – suddenly

1. Constantinople, the capital of the Byzantine Empire, located at the southern shore of the city, the Port of Theodosius into which the Lycos River pours its waters; Buadelfmonti.

2 [opposite page] Tent set-up over the Metro III shipwreck

3. In situ drawings of the Metro III shipwreck

4. Point survey with the Total Station instrument over the Marmaray VI shipwreck

5. Copying planking boards of the in situ the Marmaray V shipwreck on acetate at 1:1 scale



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¹ W. M. Wiener, *Bizans'tan Osmanlı'ya İstanbul Limanı*, İstanbul 1998.

erupts on the Sea of Marmara, especially during the summer. Such a storm was very likely an important factor in the sinking of these ships.

Istanbul University's Yenikapı Shipwrecks Project began on 20th April, 2006. Three mobile containers have been installed at the Yenikapı excavation site for documentation, drawing and recording studies. In the course of this salvage project, priority has been given to the Yenikapı 6 shipwreck. This shipwreck has been covered with a temporary tent for passive conservation. In order to prevent damage as the water-logged ship timbers dry out, an atomized sprinkler system creates a 100% relative-humid environment² (fig. 2) inside this tent.

Documentation

Archaeologists are eager to determine construction techniques and the structural schematic of the ship's timbers. Just as important, however, the *in situ* documentation of the shipwrecks constitutes crucial field-work for future reconstruction and exhibition of the recovered ships. Therefore, an expert team, headed by interior designer decorator-restorer Işıl Kocabaş (fig. 3), meticulously executes mapping, vertical and horizontal cross-sectional drawings, and a catalogue of the shipwrecks. Mapping is completed at the scales of 1:5 or 1:10 (depending on the size of the ship) with approximately 3500 measurements from four reference points set up

² U. Kocabaş, I. Kocabaş, İstanbul Üniversitesi, Yenikapı Batıkları Belgeleme, Konservasyon, Restorasyon ve Rekonstrüksiyon Projesi 2006 Yılı Çalışmaları, SBT 2006 10. *Underwater Science and Technology Convention 11-12 November 2006 Booklet of Proceedings*, 2006, pp. 115-122.



2-3



4-5

around the shipwreck. At the final stage of the *in situ* drawings, a mixed methodology supported by electronic surveying equipment is also employed (fig. 4).

Following the careful removal of frames (floor timbers, half frames, futtocks or ribs), the planking strakes are documented *in situ* with 1:1 scale drawings on clear acetate. During this study, planking joints and fasteners, pitch traces - even the smallest tool marks on the strakes - are indicated (fig. 5). In addition, 1:1 acetate drawings provide at least three different perspectives of each intact ship's timber, including hull planking strakes, stempost, keel, sternpost and ceiling planking (fig. 6).

Apart from "detail photos" taken at every stage of the work, a photo-mosaic study is carried out for each shipwreck using a specially-designed iron track. To provide three-dimensional models of the ships through this photogrammetry method, reference points are installed on the shipwrecks before photographs are taken from four different perspectives. Combining more than 100 such photographs leads to the creation of accurate, high-resolution images of the ships.

Disassembly of the ship elements

Following completion of this documentation, the timber elements of the ship are disassembled. The purpose of this disassembly is to expose invisible joints, which reveal the method of their assembly. For instance, the joining edges of two hull strakes may not be visible before this disassembly. Once the strakes are dismantled, a careful study of the edge surfaces allows us to determine how the strakes were joined, a primary clue in identifying the ship's construction technique (For example, were the strakes joined by pegs, dowels or coaks, mortise or tenons, etc.) A second goal of the disassembly is the protection of the individual ship pieces for conservation. In order to avoid problems during reconstruction and restoration following conservation, supports preserve *in situ* forms of all timber components during the removal process. These creative and unprecedented techniques were created especially for this archaeological site. One method developed for the protection of the plank strake curves, referred to as "ell", is the construction of negative moulds (fig. 7). These constructions are placed inside the ship, on the original plank strake, and fixed with large styrofoam "paper-clips". One of the most difficult phases of the work, lifting the plank strakes that consti-

6. Three-view drawing of removed ship components on acetate at 1:1 scale

7. Supporting the flaking boards with timber supports, with corresponding curves to preserve the shape and structure of the boards during lifting



tute the hull of Yenikapı 6 has been successfully completed by the production of these supports. Other plank strakes have been lifted with "L"- shaped carriers. Providing support with inner timber moulds from the inside requires detailed measurements. The external support system, on the other hand, has proven in lending support that preserves the curve of the plank strake. The plank strakes of the Yenikapı 3, 7 and 8 wrecks have been lifted using this method (fig. 8).

During the removal of Yenikapı 12, another method - epoxy supports - were used to remove fragile planking. Discovered with its cargo on board, the well-preserved Yenikapı 12 wreck presents fascinating details of cons-

truction techniques. After the removal of its cargo, nautical archaeologists were delighted to discover the ship's entire ceiling planking. However, removing this thin planking (about 2-3 mm in thickness) without damage was problematic. Using their recently developed technique, thin aluminium foil was spread on top of each ceiling plank, over which epoxy was applied to gain negative moulds. These moulds were then placed on the planking and very thin strips of synthetic fabric strips were slid under the planking and then tied to wooden handles affixed to the epoxy mould. In this way, the ceiling planking inside the epoxy mould can be removed intact, and its *in situ* form is preserved. (fig. 9).



8. Exterior support method during removal
9. Support system with epoxy moulds.



10. Construction designed to mass-lift the keel and six attached planking boards of the Metro III shipwreck
11. Carrying the lifted mass to the conservation pool

10



11

A special technique made it possible to lift the keel of Yenikapı 6 and six plank strakes as a single mass, without dismantling. With the help of a large-scale profile comb, upper and lower 1:1 scale profiles of the ship were created at 25 cm intervals and dense Styrofoam supports were cut based on these profiles. Later, these Styrofoam supports were placed individually underneath the ship. Using this technique, the wreck was secured with Styrofoam supports inside a large wooden frame. The remaining portion of the ship was removed – under curious stares of passersby – as a single mass and successfully placed inside a fresh water tank at the excavation site³ (figs. 10-11).

Conservation, reconstruction

Continuing long-term studies follow the fieldwork, construction of the laboratories, PEG tanks and fresh water tanks. The designated research centre, a laboratory provided – with the support of Istanbul University's Dean of Faculty of Letters Prof. Dr. Korkut Tuna – is a labo-

ratory at the entrance of the Faculty of Letters. Supported by BASF Turk, this facility will be the first ship conservation, restoration and reconstruction laboratory in Turkey. A second facility for continuing field studies is located through the İstanbul Metropolitan Municipality, near the Yenikapı excavation site. Seven conservation tanks – including one with heating and circulation systems – to conserve the ships have been completed by DLH, the Marmaray Regional Directorate and the İstanbul Metropolitan Municipality.

These unique shipwrecks provide invaluable information about Constantinople as the capital of a Byzantine naval empire, and about sailing vessels used in this period and their construction techniques. In addition, the Yenikapı shipwrecks project is also of great value for Turkish scholars because it is the first time that they have had an opportunity to carry out a nautical archaeology project on land. In this respect, it would be evaluated as a pioneering project in this field. Once the project is completed, Istanbul will possess one of the most outstanding medieval shipwreck collections in the world.

³ U. Kocabaş, "İstanbul Üniversitesi Bin Yıllık Bizans Batıklarını Kurtarıyor", *İdol*, issue. 30, 2006, pp. 2-7.

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Istanbul University construction techniques and features of shipwrecks in the Yenikapı Byzantine Shipwrecks Project

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Yenikapı 3 wreck

The preserved length of the ship is 9.12 metres; the widest part of the hull bottom is 2.28 metres. The wreck is comprised of a keel, 11 planking strakes on the portside, a wale, 29 floor timbers, 13 futtocks, and eight strakes of ceiling planking. While the bottom of the ship is preserved up to the first wale on the portside, the starboard side has not survived (fig. 1).

A large number of intact brick and brick fragments were found on board. Furthermore, some marble fragments were discovered *in situ* between the hull planking and ceiling planking of Yenikapı III. The presence of these marble fragments may suggest the ship's intended destination because a nearby island, Proconnesus (Marmara Island), was famous throughout the ancient world for its rich marble deposits.

The keel

The remaining length of the keel is about 6 metres. The moulded and sided dimensions are about 12 centimetres each. A keyed hook scarf joint shows where the keel was attached to the stempost.

Hull planking

The average dimensions of hull planks are approximately 20 centimetres wide by 2 centimetres thick. The planks

1. Yenikapı 3 shipwreck



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were aligned with edge fasteners in the form of little coaks or dowels about 7 millimetres in diameter. The garboard strake (the first strake laid immediately next to the ship's keel) was connected to the keel by square nails, which average about 5 millimetres. "S" and diagonal plank joints have been identified. Traces of caulking were found between some plank strakes and between the garboard strake and the keel. Knotholes on the plank surfaces were also filled with caulking.

Wale

The surviving wale measures almost 7 metres. It was 10 centimetres sided and 16 centimetres moulded. The plank strakes up to the wale were aligned with dowels. However, there is no evidence of any edge fastener on the upper edge of the wale. The wale was considerably damaged by *teredo nautilus*, or shipworm.

Frames

A total of 29 floor timbers and 13 futtocks of the ship have survived. The frames were on the average 12 centimetres moulded and 10 centimetres sided. Generally they have rectangular sections. A groove found on a floor timber near the stern suggests the presence of a stern deck or a bulkhead. The frames reveal triangular limber holes of 2 x 3.5 centimetres.

Ceiling planking

The wreck's relatively thick ceiling planks average 4 metres in length and 3 centimetres in thickness. These relatively thick planks may indicate that the cargo was heavy material, such as bricks, tiles, or marble for construction work in Istanbul. Each plank was nailed to the floor timbers with two or three nails. Triangular notches were noted around the nails.

Fastenings

All floor timbers were fastened to the keel with a single iron nail. In addition to the long arms of the floor timbers, some futtocks were fastened to the wale with iron nails. The hull planking was attached to the frames with iron nails or wooden treenails at regular intervals. The treenails were probably driven from the interior of the ship. The treenails are usually polygonal and about 15 centimetres long. There are also some square treenails, which average 1.4 centimetres on a side.

Yenikapı 6 wreck

The length of the existing wreck is 6.2 metres, with the widest preserved beam width at about 1.90 metres. The ship is comprised of a keel, a small fragment of a stempost, seven strakes of starboard planking, eight strakes of port planking, 26 frames in different sizes, 2 bilge keels, and a mast step fastened to the keel and the floor timbers. (fig. 2).

The keel

The surviving length of the keel is 5.20 metres. It was 9 centimetres moulded and 7 centimetres sided. A small fragment of the stempost connected to the keel has survived.

The planks

The hull planking of Metro III wreck is quite well preserved. Seven strakes of starboard planking and eight strakes of port planking were still in place. The planks average 1.6 centimetres thick and 15 centimetres wide.

Bilge keel

Two bilge keels were found, one on the starboard and the other on the port side of the hull's exterior.



2. Photo-mosaic view of the Yenikapı 6 shipwreck; Assembly by Çağlar Çakır

Frames

Some 26 frames have survived. These frames were, on average, 6 centimetres moulded and 4 centimetres sided and they are set in rectangular sections. Each floor timber has triangular limber holes.

Mast step

The mast step is 20 centimetres thick, 9 centimetres wide and 97 centimetres long. It has a rectangular heel 5 centimetres wide, 7 centimetres long and 5 centimetres deep. The mast step was fastened to floor timbers with three iron nails.

Fastenings

The hull planks were aligned with dowels. Neither the starboard nor the port side garboard strakes were nailed to the keel. Caulking was found between all planking strakes. While some floor timbers were nailed to the keel, others were not. The planks were fastened to the frames with treenails, usually polygonal, about 15 centimetres long and a diameter of 1 centimetre.

Yenikapı 7 wreck

The surviving wreck measures 6.6 metres long, with its widest preserved beam width at 2.10 metres. The ship is comprised of a keel, seven strakes of hull planking on the starboard and nine strakes on the port side, 12 frames, and bilge keels on the exterior of the hull, both on the port and on the starboard sides (fig. 3).

The keel

The keel is 5 metres long, 10 centimetres thick and 10 centimetres wide. Keyed hook scarf joints were noted at both ends. The remaining stempost is 1.5 metres, 8 centimetres sided and 11 centimetres moulded. A hole with a diameter of 4 centimetres was also noted on the keel.

The planks

Seven plank strakes were preserved on the port side and eight on the starboard side. The planks average 2 centimetres thick and 12 centimetres wide.

Bilge keel

Bilge keels have been discovered on the exterior of both sides of the ship's hull.

3. Photo-mosaic view of the Yenikapı 7 shipwreck after removing the timbers. Assembly by Çağlar Çakır



Frames

A total of 11 frames were preserved whereas 12 floor timber marks were recorded on the keel. On average, the futtocks are 7 centimetres moulded and 6 centimetres sided. Each futtock has limber holes.

Fastenings

The planks were aligned with dowels having both square and polygonal sections. The garboard strake was not nailed to the keel but floor timbers were nailed. Planking strakes and floor timbers are attached by either metal nails or treenails. The treenails are 10 centimetres long with an average diameter of 1.2 centimetres.

Yenikapı 8 wreck

The surviving length of the ship is 4.3 metres, with its widest preserved beam width at 2.9 metres. The ship is comprised of the keel, 10 plank strakes at the port side and 12 at the starboard side, 12 frames, and 2 wales at the port side and the starboard side exterior bottom of the ship (fig. 4). Almost half of the ship extends under a modern railway. Therefore, only the visible section was studied.

The keel

The remaining keel is 4.3 metres long, 12 centimetres moulded and 12 centimetres sided. A keyed hook scarf was preserved on the stern end.

The planks

Nine plank strakes were preserved on the port side and 10 on the starboard side. The average thickness was approximately 2.5 centimetres, and the width was 16 centimetres. Diagonal and "S" scarfs were recorded on plank strakes.

Frames

Twelve frames have survived. The average width is 12 centimetres with a thickness of 8 centimetres. Each floor timber has two semi-circular limber holes.

Fastenings

Treenails were used to align plank strakes. The planks and the frames are fastened together with both tree nails and metal nails.



4. The Yenikapı 8 shipwreck

Yenikapı 12 wreck

The surviving length of the ship is 7 metres, with the widest preserved beam width at 2.3 metres. It is estimated that the original length of the ship was approximately 8.-8.5 metres, and the original width was 2.8 metres. Documentation of this ship is still in progress. The cargo of this ship was found *in situ* on board (fig. 5).

The Byzantine period was an intermediate period between antiquity and modern times. It was also a transitional period in ship construction, from traditional shell-based construction to the more recent frame-based construction.¹ Excavations at Yenikapı prove that shipwrights used transitional construction techniques, at least in this region, until some time in the 10th century².

5. The Yenikapı 12 shipwreck, discovered with its cargo

¹ J. R. Steffy, J.R., *Reconstructing the Hull, Yassi Ada Volume 1: Seventh-Century Byzantine Shipwreck*, eds. G.F. Bass; F.H., van Doorninck, Jr., pp. 65-86, Texas 1982.

² U. Kocabaş, "Eski Çağda Gemi Yapımı", *Tarih Boyunca Dünyada ve Türklerde Denizcilik* Seminar Booklet, 2005, pp. 19-32.



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Yenikapı Byzantine shipwrecks

Cemal Pulak*

Yenikapı Harbor overview

In March 2004, preliminary archaeological excavations, conducted under the auspices of the Istanbul Archaeological Museum at the two sites chosen for Istanbul's Marmaray Rail Tube Tunnel Project (Marmaray Demiryolu Tüp Tüneli) and Yenikapı Metro Station, unearthed the remains of Constantinople's Theodosian harbor, the ancient city's greatest commercial shipping center between the 4th and early 7th centuries.¹ The immense harbor complex was built by Theodosius I (A. D. 379-395) to sustain the growing capital of the eastern Roman Empire. The harbor was built in a deep, natural bay by constructing on its southern side a large protective mole that ran from west to east, where the harbor's entrance was guarded by a large tower. Among other amenities, the harbor complex was furnished with granaries for storing grain transported in large ships from Alexandria; in the 10th century, even after much of the harbor had been silted in, its granary was the only one still in use in the city.² It is likely that the harbor was conceived with the purpose of handling additional traffic in imported goods to the expanding city, such as building materials, including timber, brick, and Proconnesian marble needed for the massive building programs of the late 4th and early 5th centuries.³ Although the archaeological excavations are currently confined primarily to the central part of the harbor enclosure, excavations at the western extremity of the site revealed portions of the harbor structures, such as confinement walls, large stone wharf blocks, and part of the mole that protected the harbor.

The original harbor's lifespan was relatively short due to the deposition of alluvium from the Lykos River (Bayrampaşa Deresi), which discharged its effluent into the natural bay in which the harbor was built. While these deposits may have been insignificant at first, they almost certainly grew in volume as the city expanded and the practice of agriculture within the confines of the walls increased, resulting in portions of the harbor being filled in and rendered useless in a relatively short time. The western extremity of the harbor silted in first, and, within half a millennium, this fill extended to cover much of the useful, well-protected portion of the harbor. The ongoing archaeological excavations have revealed that, by the end of the 10th century, the harbor proper had been nearly completely silted in, and only its eastern extremity, near the entrance, could be used by small- to

¹ Müller-Wiener 2003, pp. 7-8.

² Magdalino 2000, p. 213.

³ Magdalino 2000, p. 212.

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medium-sized coasters with relatively flat-bottomed hulls. Although the silt accumulation from the Lykos River caused great difficulty for the sustenance and use of the harbor, it has been of great benefit to archaeologists. Many objects which were inadvertently dropped or lost, or purposefully deposited in the harbor, along with ships and boats that were abandoned or sunk accidentally, were quickly silted over and preserved to our time in an exceptional condition. Excavations at Yenikapı continue to reveal shipwrecks in all areas of the harbor; 22 shipwrecks have been discovered, and more will almost certainly be found in the coming months as the excavation progresses. In addition to these 22 shipwrecks, a number of ship timbers, including those that may have belonged to derelicts or ships that sank much earlier and were partially salvaged or dispersed by storms, have been found. Furthermore, many components of ships that must have fallen off of decks or from ships' rigging, such as rigging blocks, toggles, tackles, and rope, provide an immense wealth of information for the understanding of the rigging of Medieval ships, for which evidence is extremely scanty.

The dates of the shipwrecks vary; the oldest is a soon-to-be excavated wreck found on the western end of the harbor, the portion that silted in the earliest, and is thought to date no later than the early 8th century, possibly slightly earlier. In this area, too, was found a planking fragment of a ship that, based on the details of the mortise-and-tenon joinery used in its construction, can be dated to the end of the 4th century or the beginning of the 5th century.⁴

The greatest number of ships, however, is found at the eastern end of the harbor, near the harbor entrance. Since siltation began in the western portion of the harbor and progressed towards the east, the eastern end undoubtedly was the last portion to survive for use by ships until, toward the end of the 10th century or the very beginning of the 11th century, a natural phenomenon, probably a severe southerly storm, destroyed many of the ships that had sought shelter there. All of these ships may be dated, then, to prior to this storm, in other words, very likely the late 10th century. This storm filled the harbor with a thick deposit of sea sand, rendering it useless to all but the smallest vessels and fishing boats. At least 14 ships, one apparently at anchor with its cargo of wine amphorae from the Sea of Marmara (wreck YK I, fig. 1), were sunk immediately by the violent storm. Nearly all of the ships were damaged or were broken to



1. Wreck YK I and its cargo of wine amphorae dispersed by the storm, with the keel visible to the right. The frames and one stringer of wreck YK II are visible to the center left, below the amphora cargo of YK I.

⁴ Bass and van Doorninck, Jr. 1971, pp. 27-46; van Doorninck, Jr. 1976, pp. 120-121.

pieces and, upon sinking, were quickly covered by a thick blanket of sand deposited by the storm, which preserved them until our time. This sand deposit, over a meter deep in certain areas, likely rendered the harbor unusable thereafter for commercial ships of even modest size. The ensuing marshy inlet probably served only as a haven for small fishing boats, and perhaps also for the smallest sized coasters, as revealed by many oak pilings, mostly whole timber in the round, that were driven into the soft harbor bottom to form long jetties that allowed the fishermen to reach water deep enough to moor their small boats. Some of these pilings, in fact, were driven directly through the shipwrecks lying below them, such as wreck YK II. The approximate date of the wood pilings used to build some of these jetties, based on dendrochronological or tree-ring dating, appears to be in the 15th century. A series of pilings indicate that four were cut in the 1420s, five in the 1430s, three more in the 1440s, and one as late as after 1446.⁵ Some of these pilings may have been used to replace the older ones as the pilings began to rot. It appears, therefore, that the maritime activities at the Theodosian Harbor, whether fishing or small-sized coastal shipping, continued unabated right up to the time of the Turkish assault on the city in 1453.

Ship construction in Antiquity

In the past, nautical archaeologists have generally studied shipwrecks based on chronological sequence, as that allows one to trace the development of shipbuilding practices and technology over time. However, because ship excavations usually require two to three decades to complete, including excavation, analysis, conservation, and publication, completed studies are usually limited to a few shipwrecks representing each century. While this provides an excellent understanding of the technological evolution of ships over time, it does not convey the variety and range of purpose-built ship types from any given period.

The excavations at Yenikapı, however, provide the extraordinary opportunity to study a range of well-preserved vessels in a single geographic location and from a very specific time period, the late 10th century. The shipwrecks found here include simple fishing boats, all-purpose cargo carriers, merchantman of several sizes, heavy cargo or stone carriers, and even longships or oared vessels, which are the first known Byzantine period examples of such. These finds, then, reveal both the variety of sea

transportation that formed the lifeline and very fabric of Byzantine society but also exhibit the variations in construction technology available for the period as a whole.

The finds from Yenikapı have been an invaluable source of information on the technological development and evolution of shipbuilding in antiquity and have filled a major gap in our understanding of this aspect of ancient shipbuilding. Ancient shipbuilders employed a very different philosophy of construction than that of modern shipbuilders. Modern wooden ships are first built by erecting the ship's keel and endposts, to which are attached the ship's framing (ribs). Once the skeletal framework of the ship is thus completed, this rigid structure is made watertight by the attachment of planking around the framing. Therefore, today's ships are pre-designed and erected using the skeletal or frame-based system of shipbuilding.

The ancients, however, conceived their ships very differently. Perhaps as a direct continuation of the most basic displacement watercraft, the dugout, the ancient shipbuilders did not pre-erect a skeletal structure, but after erecting the keel and endposts, continued to build the ship plank-by-plank until a hull was obtained. Since the size of a dugout is limited by the largest tree available, the need for larger vessels was met by expanding or extending the dugout by adding planking to it, and, in principle, the dugout portion of the hull was eventually replaced by the keel. Not having a skeletal structure to which the planking could be shaped around and fastened to, however, various methods of edge-joining the planks to one another were devised. Only after the ship had been thus completed were some frames or ribs inserted and fastened to the planking as reinforcement. As a result, the ancient vessel, which was conceived as a shell-based construction, derived its strength from its hull planking forming its shell, which was made fast and tight by a series of edge fasteners, whereby the modern wooden ship derives nearly all its strength from its rigid and integrated skeletal structure (skeletal-based), to which the planking is added primarily as a means of waterproofing. One method of edge fastening used in the ancient Mediterranean was that of pegged mortise-and-tenon joinery. This method involves cutting a mortise on the edge of a plank, while a second mortise is cut directly opposite on the plank that is to be joined to the first plank; a rectangular wooden tongue called a tenon, usually made of a harder wood, is inserted into the mortises, and then the two planks are pushed together to

⁵ Letter of 7 February 2006 from Peter I. Kuniholm, referring to pilings sampled at Yenikapı on 16-18 June 2005.

form a tight joint. A hole is then drilled on either side of the plank seam, through the mortise-and-tenon joinery, and a wooden peg driven from inside the hull through this hole to lock the two planks permanently together. A series of such joints would be cut all along the length of the planks to be joined, and the ship was completely assembled in this manner.

Shipwreck excavations by the Institute of Nautical Archaeology (INA) have revealed that these mortise-and-tenon joints changed in size and shape as the ship's reliance on them for strength decreased over time. They were extremely large and closely-spaced in the Late Bronze Age Uluburun Ship (ca. 1325 B.C.),⁶ the earliest sea-going ship ever found. In order to conserve both effort and resources, the size of mortise-and-tenon joinery decreased while its spacing increased, accompanied by a decrease in plank thickness; these changes were offset by the increasing frequency of use of hull support in the form of frames. With its solidly and tightly fitted mortise-and-tenon joints, locked in place with wooden pegs driven into the joints on either side of the plank seam, the late 4th-century B.C. Kyrenia shipwreck represents the typical application of these joints in hull construction during the Greco-Roman period.⁷ By the time of the late Roman period, in the 4th century, however, mortise-and-tenon joinery became less important in regard to the strength that it added to the hull, and not only were the mortises made small and fairly widely spaced, but the tenons were also loose fitting in their sockets, thereby facilitating the assembly process. The mortise-and-tenon joinery still, however, was locked in place with pegs.⁸ It is precisely this type of construction for which we have evidence at Yenikapı, in the form of a small plank found at the western end of the harbor among massive wooden pilings of a dock, presumably from an as yet undiscovered shipwreck.

During the 7th century, the use of mortise-and-tenon joints became even sparser, such that they became ever smaller, more widely spaced and extremely loose fitting, no longer secured or locked in place with pegs.⁹ As such, they served primarily as a means of edge alignment for the planking during the construction of the ship. Several disarticulated planks exhibiting this construction were also found at Yenikapı. The 9th-century shipwreck at Bozburun near Marmaris is the first example of wooden pegs used for edge alignment.¹⁰ However, because the planking of this ship was not well preserved, this method of construction was not fully understood at the time.

The early 11th-century Serçe Limanı shipwreck, sinking approximately in 1025, was excavated by INA between 1977 and 1979, and was subsequently conserved and put on display in the Bodrum Museum of Underwater Archaeology. This ship provides the earliest example of a ship that was built without the use of any edge fasteners in its hull planking and with clear indications that some of the key framing of the ship, such as that of the central portion of the hold and two extremities, were preconceived and pre-assembled before they were joined to the keel.¹¹ Therefore, to this day, the 11th-century Serçe Limanı ship represents the earliest well-studied ship to have been built by the method that is closest to modern shipbuilding practices. At Yenikapı, however, there are remains of a number of shipwrecks from the late 10th century in an excellent state of preservation, and all show evidence for the use of edge-fastened planking in their construction, even though they are only several decades earlier in date than the Serçe Limanı ship. The planks of these vessels were joined through the use of pegs or coaks, similar to those seen on the 9th-century Bozburun ship, and the excellent level of preservation at Yenikapı allows for a full understanding of this last stage of construction using edge fasteners. The use of such coaks represents the final stage of the

⁶ Pulak 2003a, pp. 615-636. See also Pulak 2003b, pp. 28-34; and Pulak 1999, pp. 209-238.

⁷ Steffy 1985, pp. 81-82, 90; also in Steffy 1994, pp. 43, 46.

⁸ Bass and van Doorninck, Jr. 1971, p. 31; van Doorninck, Jr. 1976: pp. 121-122.

⁹ Bass and van Doorninck, Jr. 1982, pp. 83-84; Steffy 1994, p. 80. For comparison and transition in mortise-and-tenon joinery of the Kyrenia, the 4th-century Yassiada, and the 7th-century Yassiada ships, see Steffy 2004, p. 84, figs. 4-8.

¹⁰ Harpster 2005, pp. 89-91; Harpster 2003, p. 412.

¹¹ Steffy 2004, pp. 153-170; see also Steffy 1994, pp. 85-91.

shell-based method of shipbuilding using edge fasteners in planking, when the resources and effort required were reduced to the minimum possible level. The shell-building method had reached its end, and the next stage of development would entail a fundamental change for the transition to the pre-designed skeletal-based construction used in modern shipbuilding, as exemplified by the 11th-century *Serge Limani* ship.

For the system to progress, though, not just the methodology but the very philosophy of shipbuilding had to change. This seemingly insignificant leap in construction philosophy is one of humankind's greatest innovations, with profound implications. At the time, ships were the most complex, mobile structures built by man, and thousands of years of development had finally come to a stalemate, with the greatest rate of change taking place during the Byzantine period. Toward the end of the Middle Byzantine period, though, this progression of shell-building came to an end,¹² and the system was due for a conceptual change that would allow for the design and construction of ships based on what could be written down and communicated through a series of written instructions or plans as opposed to the earlier traditional oral methods of shipbuilding that could be disseminated only by a master-apprentice relationship.

The ability to predetermine on paper the shapes and sizes of ships, based on simple arithmetic and geometric progressions, and to quickly spread this method, ushered in the new era of naval engineering. This principle employed pre-designed frames that formed the ship's skeletal structure, which was made watertight by shaping and securing the planking against this structure. This method soon developed at an exponential rate allowing, in a short time, for the construction of strong, skeletal-built ships that could navigate any seas, which, in turn, heralded the age of exploration and expansion. This naturally also created a distinction between the act of shipbuilding and that of designing ships, leading to a specialization in labor that resulted in the elevated status of the ship designer who, in the previous era, was a craftsman of lesser rank. The study of the ships found at Yenikapı, therefore, includes important elements of not only the study of technological development but also that of mankind in general.

Methodology

Thus far, we have completely documented, dismantled, and studied in detail only four of the late 10th-century shipwrecks at Yenikapı. These shipwrecks belong to two major vessel types: merchantmen, and oared longships, the latter finds being the only extant examples of such from the Byzantine period. Although in some instances only a small portion of the shipwreck has been preserved, all of these wrecks are in a good state of preservation. This factor allows for detailed observation regarding the construction of vessels, the wood types used, and tools employed in their manufacture. In addition, some ships retain in part or in whole the original shape and curvature of the hull, thus providing fundamental information not often found in shipwrecks excavated underwater.

Although most shipwrecks excavated in deep water represent uncompromised sites with the ship's contents mostly intact, their hull components are usually poorly preserved due to the slow silting process in such environments. These hulls tend to be extensively damaged by ship worms and other marine organisms, and are usually disarticulated or completely flattened on the seabed. Nautical archaeologists must invest a significant amount of time to document each fragment of hull wood to be able to later piece these together in order to determine, foremost, the original configuration of the ship before trying to understand the construction process. The ships found at Yenikapı, however, are exceptionally well preserved, most still retaining their original forms. Therefore, before the recovery process, much of the documentation aims at trying to capture the three-dimensional aspect of the hull in as much detail and accuracy as possible.

Unlike architectural remains, which consist of rigid building components such as stone or brick, ancient ships are mostly built of pieces of wood that were originally bent into shape and then fastened to the structure. As a ship begins to disintegrate, many of the original components that were bent into shape spring open to resume their pre-construction shape. This being the case, therefore, it is imperative to document in three dimensions any hull component that seems to retain the vessel's original form, as any attempt at disassembly will cause the wooden components to lose the actual curvature that had been maintained in the built hull itself. In that regard, documenting ships is very different in prin-

¹² Steffy 1991.

ciple than documenting architectural remains. For this process of three-dimensional documentation, a combination of methods was used, including not only linear measurements, but also photomodeling (a form of photogrammetry), direct measurements with a Total Station (fig. 2) and, in one instance, a direct laser scan of the entire shipwreck as well. All these methods were used in combination depending on the circumstance to produce an accurate three-dimensional rendition of the ship as found in situ before any attempt was made to move any of the components from the excavation site. The accuracy and the precision of this method will directly affect the correctness with which the ship will be reconstructed on paper and in three-dimensional computer generated models, which are all aimed toward the actual restoration and assembly of the ship timbers in a future museum display.

Once the three-dimensional computerized plans were generated, the entire ship was drawn in situ, full-scale on clear acetate film, detailing every nail hole,

wooden fastener, tool mark, pressure marks from use, along with any other marks and observation that might indicate how these ships were built, used, repaired, and modified throughout their lifetime. It should be kept in mind that none of the shipbuilding sequences discussed above are based on written ancient documentation or iconography, but all have been laboriously gleaned from long-term archaeological excavations and study. A nail hole on hull planking that does not have a corresponding hole on one of the ship's frames, for example, may provide a significant testimony of the ship's design and sequence of construction. An attempt was made to document every possible clue on these drawings and in subsequent catalogue entries, which were created for each timber used in the hull, including an in-depth written description as well as lists of dimensions and features. Only when these tasks were completed was the process of removal begun (fig. 3). Each timber was partially cleaned of its surface encrustation and wooden trays were built to form, taking into account the curvature of



2. Three-dimensional mapping of wreck YK II using a Total Station.

each piece to properly accommodate it in the wet storage tanks built at the site, where they would be stored until the process of conservation would begin (fig. 4).

After each timber was removed from the hull, it was thoroughly examined, further detail was added to the catalogue and drawings, and cross sections were drawn, as well as individual drawings of all four faces of the timber (fig. 5). These drawings were used to create a three-dimensional computer model of each timber, which was then inserted into the overall three-dimensional in situ rendition of the ship. The final three-dimensional plan will be used to determine the stages of construction and enable us to complete the missing portions of the ship, allowing for the accurate reconstruction of the actual vessel in a museum display.

The late tenth-century shipwrecks at Yenikapı: Merchantmen

Of the four shipwrecks analyzed by our group under INA, two are merchantmen of two sizes: wreck YK I, a small merchantman, and YK V, a medium-sized merchantman. Both of these ships were built primarily of Turkey Oak (*Quercus cerris*), producing strong, rigid hulls.

Wreck YK I consisted of the ship's keel, one floor (frames, called ribs in laymen's terms, consist of a central floor, placed over the keel, and a futtock placed to either side of it), and the entire mid-starboard side of the ship, starting from the turn of the bilge and preserved up to the caprail (the uppermost part of ship's side, and rarely preserved on ancient ships) (fig. 6). The small ship was undoubtedly at anchor when it sank and was not merely a derelict, as revealed by its cargo and two spare iron anchors found within the hull, which surely would have been salvaged had this ship been abandoned.¹³ The ship was carrying wine jars or amphorae from the Sea of Marmara and, when the storm broke, the violent waves beat the ship to pieces, breaking many of the wine jars contained in its hold; these were subsequently scattered on the seabed.

While additional timber from this wreck may yet be found in future excavations of the harbor, the surviving portions that have been recovered and documented have already revealed much about its size and appearance, as well as its method of construction. It is furthermore clear that the ship was quite old at the time it sank. Our study

3. Removing pine planks from wreck YK II during dismantling of the shipwreck.

4. Wreck YK V plank fitted on custom-made form, which will then be protected in a wooden tray and stored in fresh-water holding tanks until conservation phase begins.

5. Drawing each timber at full scale after removal from the wreck

¹³ Medieval contracts dictating the number and weights of iron anchors for use on ships is conveniently listed in van Doorninck 2004, 235, notes 82, 85-87.



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of the hull remains has revealed that it was built by the shell-first, edge-joining method using pegs (called coaks in nautical terminology) that fastened the planking to one another, from the keel up to just below the first of its four wales, which would have corresponded approximately to just above the ship's full-load waterline. After the ship was built up to the waterline with oak planks that were edge-joined to one another and held in place with temporary supports or cleats, the frames were installed and fastened to the planking with treenails. Once the planking was thus fastened to the framing, the temporary supports were removed completely. Thus, the frames served to support the completed portion of the hull up to the waterline. The ends of the installed frames, however, reached beyond the completed portion of the hull and extended through the bulwark and up to the caprail, thereby forming a skeletal foundation for assembling the remainder of the hull. Additional planking above the waterline, therefore, was secured directly onto this framework until the ship was completed. It appears, therefore, that even if the construction of the entire ship was conceived in the shell-based tradition of shipbuilding, only its lower hull was built in the shell-first method while its sides above the waterline were erected in the skeletal-first method (fig. 7).

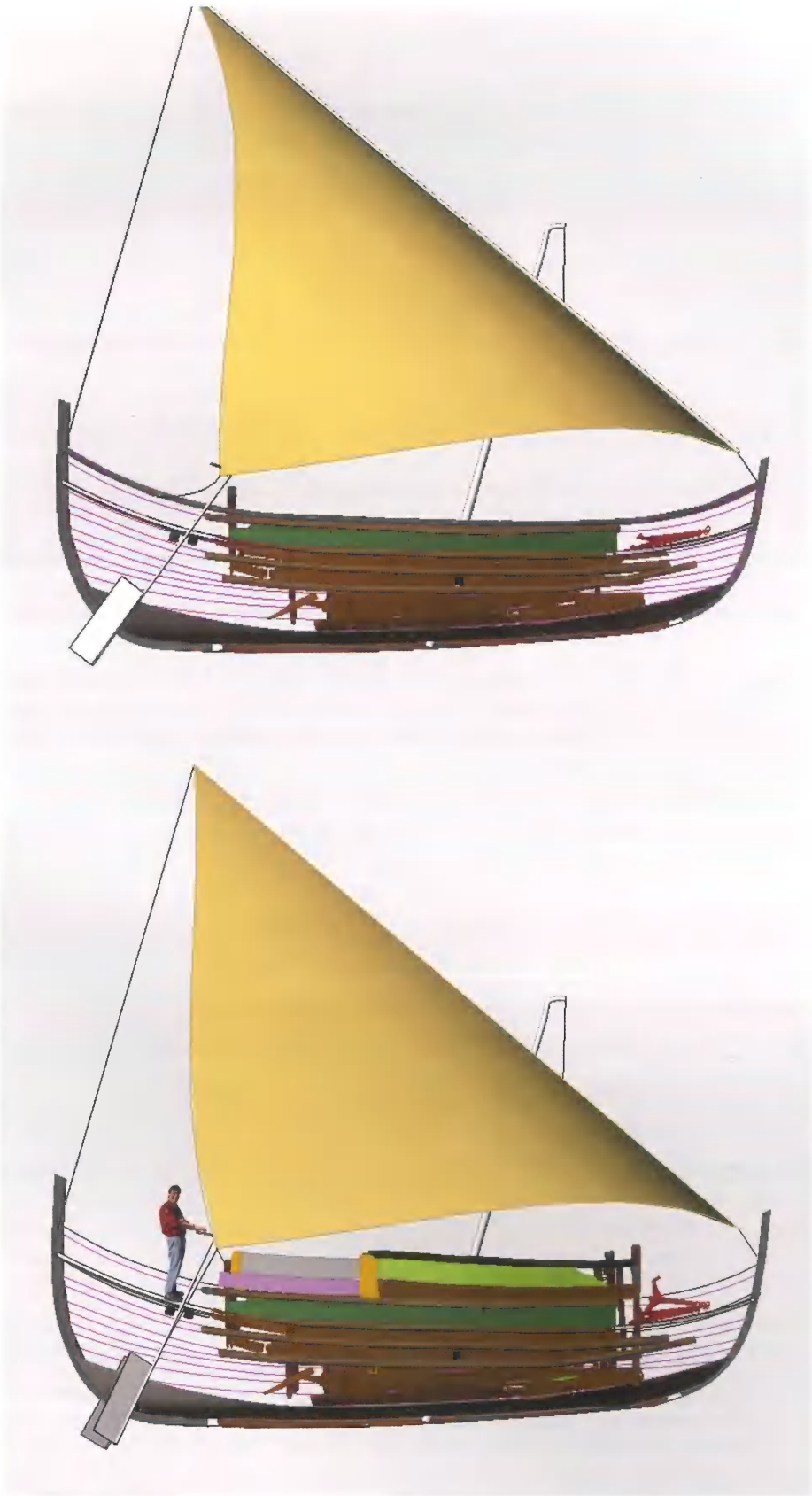
At a later time, after many years of use, the ship was overhauled: damaged planking was repaired and small sections of it replaced, and the builders decided to increase the freeboard of the ship by adding two further strakes of planking, which would in turn increase the cargo-carrying capacity of the ship. In order to support these two additional strakes, however, more framing was installed in the gaps between the original framework, and the new strakes were fastened directly to this new or secondary framework. While the original framework of the ship was fastened to the planking with wooden treenails, some of which seemed to have been later reinforced with iron nails, the planking added during the overhaul of the ship was fastened only with iron nails. As the construction method for these additions was, methodically speaking, skeletal rather than shell-based, the planking was secured directly to the secondary framing without the need for edge-fastening coaks. Moreover, these newly added planks were found to consist of less rigid, non-oak species such as Oriental Plane (*Platanus orientalis*), Red Pine (*Pinus brutia*), and poplar (*Populus nigra* or *P. alba*).¹⁴ To facilitate loading and unloading from the side of the ship, which now extend-



6. Small merchantman YK I.

¹⁴ Wood samples from all four shipwrecks were identified at the cellular level from micro samples by Nili Liphshitz of the Institute of Archaeology, The Botanical Laboratories, Tel Aviv University, Israel.

7. The three-dimensional tentative computer reconstruction of YK I. Top image shows the hull as originally built; lower image shows the hull after modifications to increase freeboard by adding further planking and framing.



ed to a higher level, a portion of the bulwark planking at the stern was made to be removable (fig. 7).

Although the surviving portion of the hull was about 6.5 meters in length, the preliminary reconstruction of the vessel suggests that the original overall length of the ship was approximately 10 meters. As such, this ship represents a typical small working vessel that was pushed to its limits in carrying cargo between the Sea of Marmara and Constantinople. The ship would have had a single mast equipped with a lateen sail, and it would have been steered with two quarter rudders, one on either side of the stern quarters.

Wreck YK V was a medium-sized merchantman built exclusively of Turkey Oak (*Quercus cerris*) to create a sturdy hull (fig. 8). The entire lower portion of the hull was preserved up to the first wale, just above the waterline, on the port side. Twelve meters of the wreck survived, and the original length is estimated to be approximately 14.5 meters. In contrast to YK I, YK V was a new ship when it sank, and it was probably washed up on the beach by a

storm and collided with a second ship, wreck YK IV, that lay partly underneath it. Had the ship been full, its cargo would have spilled out during this stage, although some iron tools were found within the ship. The ship was built in an almost identical manner to its smaller counterpart, YK I, but differed in showing no indication of old age or modification performed at a later time.

YK V would also have been propelled by a single mast with a lateen sail and steered with quarter rudders, as all ships of this period. The lightness of construction in both ships, such as the lack of a keelson (the component that runs the full length of the ship on the inside of the hull directly over the keel) as well as reinforcement timbers at the bow in the form of an inner stem or apron, indicates that these ships, although they show immaculate craftsmanship and use of high-grade materials, were not designed for the open sea, but were almost certainly confined to primarily coastal sailing within the Sea of Marmara. These wrecks, in addition to other wrecks of lightly-constructed cargo ships found at Yenikapı, indi-



8. Mid-sized merchantman YK V, preserved to just above the waterline on its port side.



9. Oared longship YK II, preserved only on its port side, with bow (at upper edge of photograph) and stern missing.

cate that, during this late period, much of the trade and supplying of the city of Constantinople was undertaken by small- and medium-sized merchantmen designed to be sailed in waters in close proximity of the city. Although some large scattered timbers have also been found during the archaeological excavations, they are from earlier periods; remains from a large, sea-going vessel from this late period have not yet been found at Yenikapi. It may be also that, at this late stage in its life, the harbor had already become too shallow due to silting, rendering it inaccessible to such larger sea-going ships which undoubtedly would have had a deeper draught and, therefore, sought shelter in the city's deeper harbors.

The late tenth-century shipwrecks at Yenikapi: Oared or longships (galleys)

The other two wrecks excavated by our group, wrecks YK II and YK IV, represent oared or longships. These finds are the first ships of this type dating to the Byzantine period. On YK II, only the port bottom or bilge of the ship was preserved, with the bow, stern, keel, and entire starboard side of the vessel missing (fig. 9). YK IV, although an aged vessel at the time it sank, is similar to YK II in terms of construction and size, but is more extensively preserved, possessing both sides of the ship's bottom, a good part of the keel, part of the bow, a section of keelson, and a portion of the ship's port side preserved up to the oar strake (fig. 10).

YK IV, a marvelously preserved ship, along with information obtained from the similar ship YK II, is allowing nautical archaeologists for the first time to understand how oared ships were built and manned during the Byzantine period. For example, not only is the spacing between the rowers known based on the locations of the oarports on the oar strake, but the sockets on one of the wales that accommodated the benches on which the rowers sat are also extant. This provides both the vertical distance and the offset between the oars and the rowers (fig. 11). Such details allow for an understanding of the ergo-nomics of Byzantine rowing, which in turn will help determine the speed and efficiency with which these vessels were propelled. Although there is no direct evidence for it, these ships would have also carried a single mast fitted with a large lateen sail, as revealed by secondary evidence.

The YK II wreck was preserved for a length of 14.5 meters, and it was originally probably more than 25 meters in length; there do not appear to be any repairs made to this ship, suggesting it was not an old ship when it sank. The YK IV wreck, preserved for a length of 18 meters, was originally probably also more than 25 meters in length. It was an old ship at the time it sank and had been reinforced later during its lifetime by the addition of secondary framing amidships, near where



10. Oared longship YK IV split in half along its keel; starboard at left. The port half of the wreck is preserved to the level of the oar strake. Bow of ship is at lower center of photograph.

the mast would have been located, as well as at the bow, which would have been subject to increased stresses due to the constant beating of the waves. Unlike the two robust cargo ships built of solid oak, these two galleys were built of more flexible Calabrian Pine (*Pinus nigra*). Its framing was mostly of Oriental Plane (*Platanus orientalis*) with about one out of every six floors made of much harder Elm (*Ulmus campestris*) wood. The choice of wood used in planking the hull was primarily an attempt to obtain long, wide planks so that the number of joints or scarfs in the planking would be minimized. This is crucial in a long, oared ship as, due to their excessive length in relation to their beam, the ship is subjected to tremendous torsional and longitudinal stresses that could cause joints to split open, thereby compromising the integrity of the vessel. The planking thickness (ca. 2.5-3 cm) of these hulls is also greater than that of the merchantmen (ca. 1.5-2 cm). The use of Oriental Plane (*Platanus orientalis*) for framing the ship is unusual, for it is a fast growing tree with soft wood of moderate strength. In a galley, where propulsion relies on muscle power, however, premium is placed on lightness of the materials used in constructing the hull. What is compromised somewhat by using light but weaker wood in the ship's framing, however, is amply gained by the long, wide, and thick Calabrian Pine used in planking the hull.

Additionally, it appears that the edge joining of the planking to one another and also to the framing of both YK II and YK IV was made with treenails fashioned primarily from young branches of Turkey Oak (*Quercus ceris*) rather than cut from solid wood, as was the case on the oak-built, rigid merchantmen. That the builders of these oared ships went out of their way to use such flexible fasteners for the framing shows that maintaining the ship's flexibility was a significant concern in the construction of such ships. Presumably, treenail fasteners made from flexible young branches prevent the fasteners from breaking and working free during the flexing of the ship at sea.

The function of the oared vessels remains unclear; they were lightly but well-built ships, a fact which seems to preclude their use as heavy transport vessels. However, the presence of at least nine preserved bench sockets on YK IV suggests that there were likely rowers along the full length of the ship, probably numbering no less than 20 rowers per side, which is far more than necessary to transport light cargo loads. It is more likely, therefore, that these ships were light naval vessels such



11. Oarports and bench notch (lower center) on oared longship YK IV.

as those used for scouting, speedy communication, transport purposes or even light naval warfare. This is somewhat supported by their construction; however, if this is the case, it is unclear why these naval vessels were present in this commercial harbor at the time of the storm, although no known documentation exists precluding the use of commercial harbors by naval vessels.

It is expected that ongoing excavations will reveal even more shipwrecks at Yenikapı. As each wreck is excavated, studied in detail, and its construction purpose determined, we will gain an unprecedented view of Byzantine ships and shipping in use from the time of Constantinople's inception in the early 4th century to the late 10th or early 11th century.

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Daily life in Yenikapı

Gülbahar Baran Çelik*

The excavations conducted at the Yenikapı Station as part of the Marmaray and metro projects are still in progress at Istanbul's Aksaray quarter, between Mustafa Kemal and Namık Kemal Streets, as well as in the area west of Namık Kemal Street (figs. 2-3). The articles included in the catalogue of the exhibition at Istanbul Archaeological Museums focus on the excavations conducted thus far, and do not reflect the final results. This is why the articles published in the catalogue should be regarded as a starting point and evaluated as an introduction¹.

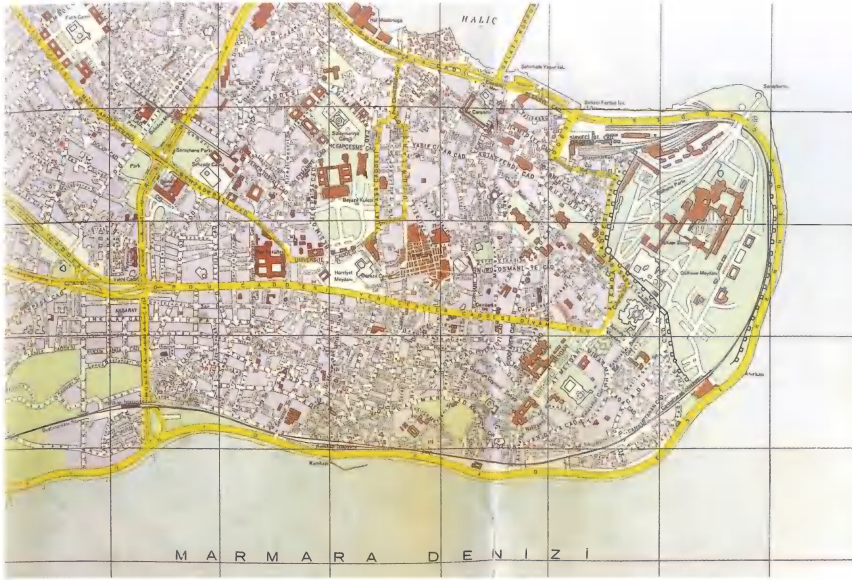
The finds displayed under the exhibition heading "Daily Life in Yenikapı", represent a broad timeline that extends from the Late Neolithic to the Ottoman Period. Presenting this broad timeline under a single heading is solely related to the exhibition's design. Therefore, this article offers a very general overview and brief information on daily life in these periods.

In this synopsis, the prehistoric settlement is conveyed through possible lifestyle scenarios, taking into consideration architectural remains and small finds, and the environmental features of the period. Finds from the Iron Age have been evaluated with respect to the migrations of the period, whereas finds dated to the Classical Period have been evaluated with regards to their relation to migrations, trade and the city of Byzantium. Late Roman and Byzantine periods are portrayed within the framework of the Port of Theodosius located in Constantinople, as well as the ships arriving at or departing from the Port, which is part of the excavation site. During the Ottoman Period, the focus lies on the changing function of the Port area, which was filled in for a variety of reasons.

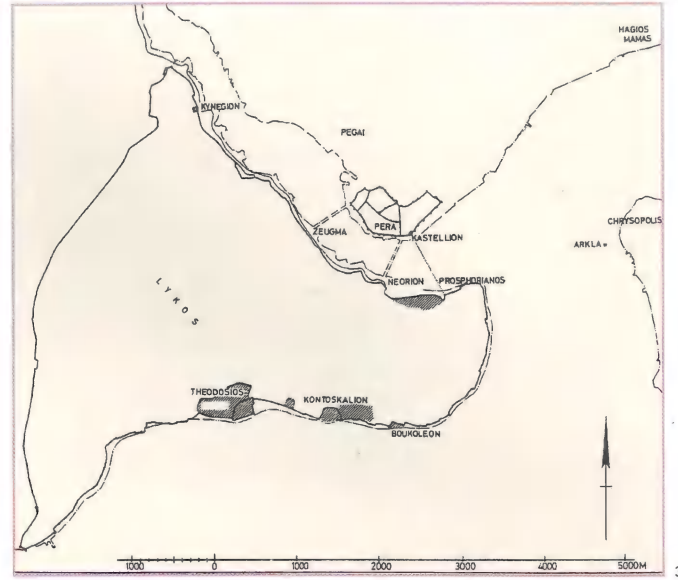
¹ We expect the final scientific results of the excavation to be published alongside the research and studies to be conducted in the future.

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1. Excavation site localization, from *İstanbul Şehir Rehberi* (Istanbul City Guide)
2. Map of the Port of Theodosius; Millingen
3. General view of the excavation site

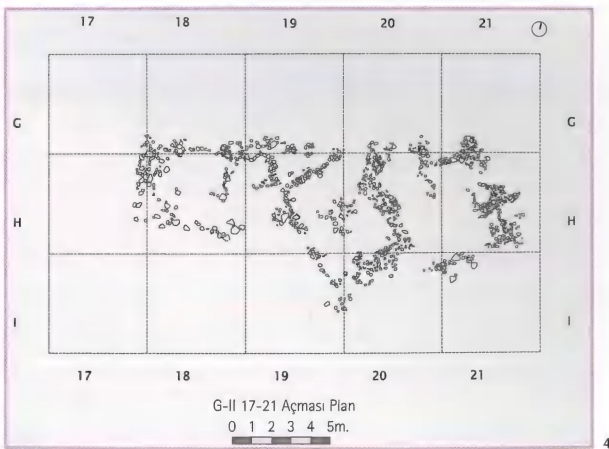


Prehistoric settlement

The architectural remains and small finds discovered in the excavation confirm the presence of settlements during the Late Neolithic-Early Chalcolithic periods to the immediate north of present-day Yenikapı train station, between Mustafa Kemal and Namık Kemal Streets on the east of the Yenikapı Marmaray stations². However, as these prehistoric finds have only recently been encountered, the information available is still at a preliminary stage. Finds from this period are confined to architectural remains, a few wares and a handle made of bone (fig. 7). The suggested name for this settlement on the excavation site is "Yenikapı prehistoric settlement."

Studies conducted to date in the environs of Marmara indicate that during the 6th millennium BC, shoreline settlements had disappeared and that, until the emergence of Toptepe culture (settlement between Marmara Ereğlisi and Tekirdağ; 5200-4800 BC), there was no trace of any other settlements on the shore. This is why the Yenikapı settlement, which we consider a shoreline settlement, should be evaluated with respect to the transformation that Marmara underwent over time.

The melting of the North European glaciers sent their overflow of cold, fresh water into the Marmara, which was a freshwater lake during the Last Glacial Epoch. Following the overflow of worldwide sea wates through the Dardanelles in approximately 5700 BC, the Marmara began to fill with warmer salt water, leading to changes in saline ratio, vertical oxygen circulation and sea levels. There is an ongoing debate as to exactly when the Istanbul



4. Yenikapı prehistoric settlement. Drawing by Architect Murat Topuz

5-6. Detail of Late Neolithic-Early Chalcolithic architectural remains

² The prehistoric settlement has been excavated with the careful and meticulous work of archaeologist Mehmet Ali Polat working in the area.

bul Strait flooded in the course of the complex geomorphologic developments of the area, and there is no consensus among the experts in the field about its course³.

At 6.30 metres below sea level, architectural remains have survived with a stone foundation, a quadrilateral and circular plan at different points. This plan can be understood from the way the stones are set. It is evident that the load-bearing system was formed by timber pillars supported by stones and – based on burnt adobe blocks discovered in the excavation – wattle-and-daub walls⁴ (figs. 4–5–6). In this respect, the architectural remains show similarities to Aşağı Pınar Neolithic Period architecture found in Kırklareli⁵.

The oldest pottery sherd discovered in the prehistoric Yenikapı settlement is similar to the hang-holed pottery examples of the Fikirtepe settlement, located to the east of the Istanbul Strait⁶. Furthermore, the finds include a vessel that resembles jugs with elongated, high necks and single handles of the Toptepe culture⁷ (catalogue no. Y28); The Toptepe culture was first encountered during the Yenikapı excavations in Istanbul.

Although it is not close to the sea, the Fikirtepe settlement was close enough to the shore to take advantage of the sea and what it had to offer. Still, it was at a safe distance for protection from its dangers. The settlers of this area were hunters and fishermen. They owned a limited number of domesticated animals and possibly practiced agriculture or a mixed economy⁸. It is known that Toptepe settlers were involved in agriculture, owned domesticated animals and consumed quantities of seafood⁹.

The rich variety and abundance of fish and seafood in the Sea of Marmara must have been an important factor when Yenikapı settlers chose this area as their habitat.

Seafood must have played an important role in feeding both cultures mentioned above. It is also possible that deep-sea fishing was common in this area. Apart from nutrition, we believe that other reasons for choosing to settle in this area may be revealed following geological studies¹⁰.

Considering that the uncultivated fields of Istanbul and its environs were covered with scrubs mixed with forests of deciduous trees, it is generally accepted that prehistoric forests took up a much larger area, which was a habitat for game animals¹¹. It can thus be assumed that hunting was also part of daily life for the prehistoric settlers of Yenikapı.

We are not certain yet if these people were involved in agriculture. However, the botanical study of plant



7. Terracotta ware sherds from the Late Neolithic–Early Chalcolithic periods

³ M. Özdoğan, "The Black Sea, the Sea of Marmara and Bronze Age Archaeology–An Archaeological Predicament", eds. G. Wagner, E. Pernicka and H-P. Uerpmann, *Troia and the Troad*, Springer, Berlin 2003, pp. 105–120; M. Özdoğan, "Neolithic cultures at the contact zone between Anatolia and the Balkans – Diversity and Homogeneity at the Neolithic Frontier", eds. I. Gatsov, H. Schwarzberg, *Aegean–Marmara–Black Sea: The Present State of Research on the Early Neolithic*, Beier & Beran, Langenweissbach 2006, pp. 21–28; P. Jablonka "The Link between the Black Sea and the Mediterranean Since the End of the Last Ice Age: Archaeology and Geology", eds. Günther Wagner; E. Pernicka; Hans-Peter Uerpmann, *Troia and the Troad*, Berlin 2003, pp. 77–94; Cordova, Carlos E., "Holocene Mediterraneanization of the Southern Crimean Vegetation: Paleoecological Records, Regional Climate Influences", *The Black Sea Flood Question Changes in Coastline, Climate and Human Settlement*, eds. V. Yanko-Hombach, S. Gilbert Allan, N. Panin, Pavel M. Dolukhanov, Dordrecht 2007, pp. 319–340; Chepalyga, Andrei L., "The Late Glacial Great Flood in the Ponto-Caspian Basin" *The Black Sea Flood Question Changes in Coastline, Climate and Human Settlement*,

eds. V. Yanko-Hombach, S. Gilbert Allan, N. Panin, P. M. Dolukhanov, Dordrecht 2007, pp. 119–144.

⁴ The architecture has been interpreted by Prof. M. Özdoğan.

⁵ M. Özdoğan, "Anadolu'dan Avrupa'ya açılan kapı Trakya" *Arkeoloji ve Sanat*, issue: 90, Istanbul 1999, pp. 16–18.

⁶ Interpreted by Prof. Özdoğan.

⁷ Ibid, p. 13.

⁸ M. Özdoğan, *Fikirtepe*, Istanbul University Faculty of Letters, Department of Prehistory, unpublished PhD thesis, p. 9.

⁹ M. Özdoğan, "Marmara Bölgesi kültür tarihi ile ilgili bazı sorunlar ve bunların çözümüne jeomorfoloji araştırmalarının katkısı", *First Archaeometry Results Seminar*, Ankara 1990, pp. 345–357.

¹⁰ Studies on the geology of the excavation site are in progress with the participation of Prof. Dr. Namık Yalçın, Prof. Yücel Yılmaz, Assoc. Prof. Oya Algan, Assoc. Prof. Doğan Perinçek and Dr. Erol Sarı.

¹¹ Y. Dönmez, "Trakya bitki coğrafyası'nın ana hatları" *Güneydoğu Avrupa Araştırmaları Dergisi*, issue: 1, Istanbul 1972, pp. 218–234; M. Özdoğan, *Fikirtepe*, Istanbul University Faculty of Letters, Department of Prehistory, unpublished PhD thesis, 1979, p. 15.

samples discovered near the settlement may provide further information on this subject.

In short, the prehistoric settlers of Yenikapı must have fished and hunted to obtain food. It is thus a given that they made tools for these activities. However, as we have stated earlier, these prehistoric finds have only recently been discovered at the excavation site, so these digs are still at a preliminary stage. With the exception of a bone handle, no other tools have yet been unearthed (fig. 7).

If architectural remains are considered as the dwellings of human beings, then it can be said that the Yenikapı inhabitants lived in nearly quadrilateral, wattle-and-daub houses.

Finds yet to be discovered in the course of the excavation may shed light on the daily lives and customs (trade, burial traditions, and continuity of the settlements) of these people.

The Iron Age

Finds from the Iron Age¹² are encountered approximately 30 centimetres above, and over, the prehistoric settlement stratum. It is thought that the Early Iron Age pottery discovered in the excavations around the Marmara spread to the southern areas of the Sea of Marmara through Thraco-Phrygian migrations¹³ and crossed over to the islands by sea.

It can be argued that Early Iron Age finds from the 13th-12th century BC, discovered in the outbuilding digs of the Istanbul Archaeological Museums as well as several samples unearthed in Thrace, support the possibility that these migrations could have occurred across the Istanbul Strait¹⁴ and that the Early Iron Age samples discovered in the Yenikapı excavations will be evaluated as part of this possibility (catalogue no. Y29-Y30).

No finds indicating a settled life throughout the Iron Age have been encountered on the excavation site. Therefore, it is rather difficult to make any interpretation of daily life in the area during this period. The limited Iron Age finds are confined to wares related to food.

Colonization period and the city of Byzantium

Finds from the Iron Age in the excavation are followed by finds from the Classical Period. Among these are vessels such as *skyphos*, *oinochos*, and *aryballos*, as

well as black glazed ware and amphorae (catalogue no. Y31, Y32, Y33).

Between the years 750 and 550 BC, a number of colony cities were established on the shores of the Aegean, the Mediterranean and the Black Sea¹⁵. According to several ancient sources, the city of Byzantium was founded by Megaran colonists led by Byzas in 658-657 BC, as a part of this time of colonization¹⁶.

In this period, Yenikapı must have been a natural harbour and not a large and busy port. This is why it appears more plausible to associate the finds from this period with the city of Byzantium. Sources note that the inhabitants of Byzantium lived on the waterfront, often made their living through fishing, took an interest in the wine and wheat trade, and that Byzantium was a small, affluent town equipped with a port large enough to accommodate merchantmen trading with countries that bordered the Black Sea and the Aegean¹⁷. In his seminal work *Geographika*, Strabon notes that, after the Sinopians, the inhabitants of Byzantium were ranked third in fishing¹⁸.

The *oinochos* (catalogue no. Y32) discovered in the excavation can be regarded as an object left behind, for one reason or another, by one of the ships arriving from the south to pass through Marmara and dock at Yenikapı during this colonization process.

The vessels coated with black glaze (catalogue no. Y33) bear a strong resemblance to the wares with shallow palmette figures discovered in Istanbul during the Archaeological Museums Outbuilding and Kadıköy Altıyol excavations. The finds relating to daily life in this period indicate that the tables of Byzantium featured black-glaze wares and that wine carried in amphorae were drunk from libation vessels such as the *skyphos*.

Roman-Byzantine (East Roman) period and the city of Constantinople

Finds from the Roman Period in the Yenikapı excavations are comprised of wares, coins and perfume bottles from the Imperial Period. Finds from the Late Roman and Byzantine periods, on the other hand, include glass beakers and cups, terracotta wares, pottery lamps, lanterns, flasks, bone and ivory game pieces, numerous wooden combs, a bronze mirror, keys, and leather sandal soles.

On 11 May, 330, Byzantium was declared the new capital of the Roman Empire by the Emperor Constantine I. The city's name was duly changed to Constantinople af-

¹² It is known that as a result of migrations from the west in the early 12th century BC, almost all the important Anatolian cities were destroyed, the Late Bronze Age came to an end, as did the Hittite Empire. The scarcity of documents available on the period between the collapse of the Hittites and the emergence of the Phrygian Kingdom in the 8th century BC, has led to this period being named the Dark Age.

¹³ It is assumed that the Phrygians crossed over to Anatolia via Thrace.

¹⁴ Ş. Dönmez, "Protohistorik çağda Haliç ve Tarihi Yarımada" *Dünü Bugünü ile Haliç Symposium Papers*, İstanbul 2003, p. 45; Ş. Dönmez, "The Prehistory of the İstanbul Region: A Survey", *Ancient Near Eastern Studies*, XLIII, 2006, p. 243.

¹⁵ Oğuz Tekin, *Eski Yunan Tarihi*, İstanbul 1995, p. 30.

¹⁶ Colonization is the process in which the peoples of a tribe or a city establish bases outside of their own boundaries to conduct agricultural or commercial activities.

¹⁷ Alexander Van Millingen, *Konstantinopolis*, trans. A. Gürçağlar, İstanbul 2003, p. 19.

¹⁸ Strabon, *Antik Anadolu Coğrafyası*, (*Geographika*: XII-XIII-XIV), trans. Adnan Pekman, ed. N. Başgelen, İstanbul 1993, book XII/III, p. 18.

ter its eponymous founder. In 395, the Roman Empire was divided into Eastern and Western empires, and Constantinople subsequently became the capital of the Eastern Roman Empire. Referred to as the Byzantine Empire by modern historians, the Eastern Roman Empire was a direct continuation of the Roman Empire politically, yet it had a distinct culture in terms of its religion and the arts.

The political centre of the Empire was located in present-day Sultanahmet. Extending from the shoreline to the Hippodrome, the Great Palace was not only the residence of the ruling dynasty, but it also served as the centre of political administration¹⁹. The empire was a multinational and multi-lingual state. Until the 6th century, Latin was the official language, whereas in the 7th century, Latin and Greek were used together²⁰. As in the former city of Byzantium, trade and fishing were among the most important sources of income in Constantinople. The locals were comprised of fishmongers, merchants, artisans, and farmers.

Food, as in many cultures, held a very important place in the daily life of the Byzantines. Bread was the staple food of Byzantium. Cheese and raw or boiled fruit were also among favorite foods. Apples, melons, watermelons, figs, dates, grapes, walnuts, hazelnuts and pine nuts were frequently consumed. Olive oil was always used for cooking. White and red wine were popular drinks. Meat dishes often included various game meats and poultry. Pork, especially pork chops, were highly favored. Birds were either fried or boiled, though grilling was also an

option. Nutritionists classify sheep heads, brains, lungs, livers, and hearts as nourishing offal consumed in Byzantium²¹. Lambs and cattle were brought from Anatolia, whereas wild animals such as antelope were brought from Thrace and Bithynia and held a very important place in the Byzantine²² cuisine. The most important source of protein in the city was fish. Tuna, mullet, mackerel, turbot, sea bass, lobster, crab, shrimp, oysters, mussels, and other shellfish were commonly found at the city's fishmongers. In the late-Middle Ages, anchovy, fish roe and caviar were brought from the Black Sea, whereas pickled herring was imported from Northern Europe.

Oils and cheese were sold at various markets as Mediterranean products. Cretan and Paphlagonian cheese were delicacies in the capital²³. Syrian and Palestinian wines were among the most preferred drinks²⁴.

Studies of animal bones discovered in the excavation²⁵ reveal that cattle, pigs, sheep, goats, and game animals, such as antelope, were slaughtered for food and that, in some cases, the brain was removed. Also discovered among the animal bones were the bones of a camel and poultry (possibly duck) bearing traces of cuts (fig. 13, 15).

Work has not yet been conducted on the headless, closely stacked fish remains discovered in the excavation, and consequently their species have not been identified. However, the absence of heads indicates that the fish were caught but dropped into the sea for an unknown reason (fig. 8). A large quantity of pine cones with their nuts intact, as well as egg shells were foods in the

¹⁹ T. Tamara Rice, *Bizans'ta Günlük Yaşam*, trans. Bilgi Altınok, İstanbul 1998, p. 47.

²⁰ Oğuz Tekin, "Bizans İmparatorluğu'nun tarihine ve sikkelerine kısa bir bakış" *Akdeniz'in Mor Bin Yılı: Yapı Kredi Koleksiyonu Bizans Sikkeleri Sergisi*, İstanbul 1999, p. 23; T. Tamara Rice, *Bizans'ta Günlük Yaşam*, trans. Bilgi Altınok, İstanbul 1998, p. 21.

²¹ Andrew Dalby, *Bizansın Damak Tadı: Kokular, Şaraplar, Yemekler*, trans. Ali Özdamar, İstanbul 2004, p. 63.

²² Marcus Rautman, *Daily Life in the Byzantine Empire*, Greenwood Press, London 2006, p. 95.

²³ Ibid., p. 95.

²⁴ Ibid., p. 96.

²⁵ The animal bones have been studied by İstanbul University Veterinary School faculty member Assoc. Prof. Vedat Onar.



8-9



10

8. Fish remains discovered in the excavation

9. Egg shell

10. Pine cone with nuts



11

11. Cherry seeds found aboard a shipwreck

list (figs. 9, 10). The shallow pottery, which appears to have been used among the tableware of this period, as well as glazed wares, both deep and shallow (fig. 14), glass beakers and cups with stems and flat bases (catalogue no. Y35, Y37) also hold a significant place among the excavation finds.

An example of a heating pot made to keep certain sauces warm at the table is also included among the finds from the excavation (catalogue no. Y45).

Pottery lamps constitute the largest find group in terms of number among the daily-life objects unearthed in the excavation. In Byzantium, apart from their liturgical significance, these lamps were also used for illumination. Among the unearthed examples, there are many terracotta lamps originating from Western Anatolia, the Balkans, and North Africa. Considerably larger in comparison to the other examples, one lamp (catalogue no. Y36) must have been used to illuminate a sizeable or open area²⁶. Another kind of lighting object discovered in the excavation is a terracotta lantern (catalogue no. Y38).

Leather-sandal soles constitute another group of finds discovered on site. It appears that these sandals were products of a fine workmanship. Traces of wear indicate that they are the soles of used sandals (catalogue no. Y41). Based on these finds, it can be argued that the inhabitants of Constantinople wore leather sandals in a variety of styles and decorations and, consequently, paid attention to the look of their footwear (fig. 11). Personal possessions have traditionally been significant in all periods of history. These objects often carry wishes for luck and health. A personal object discovered in the excavation is a wooden-sandal sole. The inscription on the sole is particularly interesting for conveying an emotional dimension of daily life. The inscription, "wear it in good health and joy, my lady"²⁷ indicates that this sole was possibly offered as a gift to a woman (catalogue no. Y39).

Games were an important source of entertainment in the daily life of Byzantium. It is known that games such as chess, backgammon and checkers were played in Byzantium, and that chess and backgammon were brought here from the East in the 6th century AD²⁸. Among the Byzantine-Period game finds of the excavation are an ivory chess piece, bone game pieces (catalogue no. Y46, Y47), as well as bone and ivory dice (catalogue no. Y42). The ivory chess piece (catalogue no. Y46) resembles the chess pieces discovered at the Marmaris Serçe Limanı Shipwreck. It is believed that this piece represents the king or the queen²⁹.

²⁶ The majority of pottery lamps carry relief motifs of pagan and Christian faiths on the discus. The reverse side of a number of these lamps also features stamps of inscriptions.

²⁷ The inscription is translated by Istanbul Archaeological Museums Latin and Greek Language specialist Feza Demirkök.

²⁸ T. Tamara Rice, *Bizans'ta Günlük Yaşam*, trans. Bilgi Altınok, İstanbul 1998, p. 55.

²⁹ Kenneth Cassavoy, "The Gaming Pieces", *Serçe Limanı: An Eleventh-Century Shipwreck*, volume 1, Texas A&M University Press, 2004, p. 331.

It is known that gameboards were created by drawing lines on roof tiles or steps³⁰. A game board comprised of a tile with three quadrilaterals drawn inside one another has been discovered in the excavation (catalogue no. Y49). There is no doubt that popular games were passed down from generation to generation across the centuries. It appears that the rules of a popular game still played in Turkey, and commonly known as "nine stones", has the same rules as the game drawn on the tile from the excavation. The frequent occurrence across the site of boards prepared for this particular game indicates that it was indeed a popular and oft-played game³¹.

Included within the borders of Constantinople, Yenikapı had an important commercial centre, the Port of Theodosius, during this period. As manifested by the excavation finds, this was a large port bustling with commercial activity. Daily life at this large port of the Byzantine Period must have been quite busy. Moored ships unloaded am-



- 12. Sandal soles for male, female and child
- 13. Deer antlers and ibex horns found in the excavation
- 14. Shallow ceramics with red fabric and glazed Byzantine pottery
- 15. Skeleton of a camel, used as a beast of burden

³⁰ Marcus Rautman, *Daily Life in The Byzantine Empire*, London 2006, p. 57.
³¹ Ibid., p. 57.



12



14



15

horae filled with wine, olive oil, or *garum* (sauce made of small fish), and other cargo such as grains, or, perhaps slaves. Studies of numerous camel and horse skeletons discovered at the port indicate that these animals were used to haul heavy loads (fig. 15). Therefore, it is possible to assume that a large number of camels and horses were kept at the harbour to carry the cargo from the ships into the city. Furthermore, we can also imagine that sailors carrying amulet-like lead plaques (catalogue no. Y43) with inscriptions to protect their ships from possible dangers mended their sails and repaired their ships, tried to obtain the provisions they would need during their journeys, or played games like chess or backgammon in their spare time.

The daily life of seafarers continued aboard the ships arriving at or departing from the port. Fire bricks and cooking ware discovered at the Bodrum Yassiada Shipwreck, revealing that the ship had a kitchen³². The discovery of four dishes and four spoons inside the hold of the small cargo ship at the Crete Shipwreck indicates that the ship's crew had four members³³.

The early 11th-century Yenikapı 1 and the 9th-century Yenikapı 12 (Marmaray 6) shipwrecks excavated during the digs are merchantmen that sank with their cargoes. The majority of both ships' cargoes was composed of amphorae.

Between the lowest row of amphorae and the timbers of the hold's latch, remains of faggots were discovered in the Yenikapı 13 shipwreck. These bundles of twigs and sticks were placed as a cushion between the amphorae to prevent them from banging into one another and shattering. The hold of the shipwreck is located between the two ribs of the stern. It is immediately visible with its partition boards nested in the mounts on the ribs. This section contained the seafarers' food and drinks inside amphorae, the stove-like brazier and lid used for cooking, the cooking ware, mugs, pitchers, knives and a basket full of cherries (fig. 17-21). Underneath the triple-burner brazier, there is a lid upon which the burners are set and next to it is a pile of olive seeds, which were considered an important source of nutrition in Byzantium³⁴ and possibly carried in sacks. A wicker basket filled with cherry seeds was found beneath the brazier.

A 9th-century coin found aboard the ship was useful in dating the shipwreck. Furthermore, the well-preserved cherry seeds indicate that the ship sank during the summer months.

The boxwood and oak spoons and plates discovered aboard the Yenikapı 1 shipwreck, as well as other wooden



16-17



18



19

16. Brazier.

17. Olive seeds

18. Hold of the shipwreck

19. Cherry seeds in a basket
20-21. View of wreck before
and after the cargo is removed

³² L. Casson, *Antik Çağda Denizcilik ve Gemiler*, trans. Gürkan Ergil, İstanbul 2002, p. 117.

³³ Ibid., p. 119.

³⁴ A. Dalby, *Bizansın Damak Tadı: Kokular Şaraplar Yemekler*, trans. Ali Özdamar, İstanbul 2004, p. 68.



20-21



plates unearthed on the excavation site must be the kitchenware of the seafarers (fig. 22). A portion of the wooden combs found at the port can be considered as the personal possessions of the seafarers (catalogue no. Y44).

The Ottoman period

On the morning of 29 May, 1453, Constantinople was conquered by Sultan Mehmet II and included within the borders of the Ottoman Empire. The city's name was initially Turkified as Konstantiniye and was used alongside the relatively new name, Istanbul³⁵. When Constantinople was taken over by the Turks, it was in a rather dilapidated, unkempt state³⁶. Mehmet II immediately commissioned a zoning and development plan that would render the city a Turkish and Islamic appearance and moved the capital of the empire from Edirne to Konstantiniye. Inhabited predominantly by Christian subjects, the old quarters were preserved without any damage³⁷. The present-day excavation site where the Port of Theodosius was once located, had already silted from alluvium and deposits carried by the Lycos River (Bayrampaşa River) during this period. The famous Langa Gardens stretched above the silt layer.

Ottoman finds from the excavation include an architectural ruin, which appears to be a workshop, İznik, Kütahtaya, Çanakkale, and Tophane ware samples, Chinese porcelains and celadons, as well as figurines and pottery lamps (catalogue no. Y50, Y51, Y52). Based on a medicine bottle lid, glass laboratory tubes and medicine bottles discovered within the architectural ruin unearthed at the east end of the site, this structure has been identified as a pharmaceutical workshop (catalogue no. Y53, Y54). Furthermore, coins discovered among the ruins have helped archaeologists to date the structure to the 18th century. A bronze figurine of Jesus Christ and a mother-of-pearl icon with the depiction of a saint indicate that the structure was owned by non-Muslims (Christians?)³⁸. The

structure is of particular importance, as it sheds light on health care in Ottoman daily life.

Istanbul during the republican era

The Metro and Marmaray projects have been designed to solve the heavy traffic problem – particularly in Yenikapı – between the two shores of the Bosphorus. Today, these projects have become an integral part of Istanbul's daily life. The archaeological excavations conducted as part of these projects have inevitably been included on the agenda. It is certain that the rail transit system will greatly relieve the traffic problem of Istanbul. However, the prehistoric settlement unearthed during the archaeological digs, as well as the Byzantine architectural remains, the Byzantine Port of Theodosius, and the numerous shipwrecks are priceless finds for the cultural heritage of Yenikapı, Istanbul, Turkey, and the world. Academics and scholars are eagerly awaiting results obtained from these discoveries. It is also evident that any incomplete or incorrect work conducted in this area is irreversible. The excavations will also attain full value and meaning through accurate, careful and meticulous documentation, which requires time. The time needed to complete archaeological excavations should be regarded not as the postponement of solving Istanbul's traffic problem, but as the time needed to bring to light the history and documents behind a world capital, over which people fought across the centuries. We all look forward to the day when Istanbul's future daily life will be liberated from the traffic problem. Our common desire and hope for the future, however, should be the preservation of Istanbul's cultural heritage, the establishment of a contemporary port museum within the Yenikapı Station where excavation finds are presented to visitors in a manner that befits the fame and history of this city, and the transmission of this heritage to future generations.

22. Wooden plates and spoons among the excavation finds

³⁵ Caroline Finkel, *Rüyadan İmparatorluğa Osmanlı İmparatorluğu'nun Öyküsü-1300-1923*, trans. Zülal Kılıç, Istanbul 2007, p. 52.

³⁶ Semavi Eyice, *Tarih Boyunca İstanbul*, Istanbul 2006, p. 67.

³⁷ Raphaela Lewis, *Osmanlı'da Günlük Yaşam*, trans. Beyza Sümer, Ankara 2006, p. 54.

³⁸ During the Ottoman Empire, the number of Turkish and Muslim pharmacy owners was very few. This is attributed to two reasons. First, Turks and Muslims considered pharmacology as a trade profession and had little regard for it and second, they were not able to find pharmacies where they could work during their apprenticeships.

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Faith in Yenikapı

Arzu Toksoy*

The excavations conducted in Yenikapı under the auspices of the Istanbul Archaeological Museums led to the discovery of numerous faith-related finds from the Roman to the Ottoman periods, the majority of which are dated to the Byzantine Era. Before we evaluate these finds, however, we shall explore the system of faith, which constituted one of the foremost building stones, or better yet, the core of the Byzantine civilization. In this article, this extensive and profound historical process will be discussed within the context of the finds discovered at the Yenikapı excavations.

In the course of the more than a thousand-year history of the Byzantine state, faith played a major role, both in government and in social life. The undisputable effect of faith on the internal and external political moves of the state, the enthronement or dethronement of emperors, and the order of social life, clearly manifests this importance. The Roman Emperor Constantine I attributed his victory at the Battle of the Milvian Bridge in 312 AD to "a cross he saw up in the sky," and by extension, to "Jesus Christ." He embraced the Christian faith, which, in over the previous 300 years had been oppressed by Roman rulers¹.

Constantine the Great believed that the Romans were descendants of Anatolian-based Trojans. Despite his economic and geopolitical concerns, he attempted to devise a development strategy for Ilium (Troy) with a view to relocating the empire's capital to this city. However, on the way to Rome, he opted for Byzantium instead, a city which he deemed more suitable as a capital during a visit. He later named the city after himself². His successor, Emperor Theodosius I (379-395 AD), not only expanded the city's borders, which Constantine had surrounded with walls, but also built the Port of Theodosius³ in present-day Yenikapı where the excavations are in progress.

In fact, the Byzantine culture was a new and original phase of Roman culture, amalgamated with traditions of the Orient. Richly diverse in terms of ethnicity, the Byzantine Empire succeeded in sustaining its own culture with the heritage of Great Rome, the deep-rooted tradition of government and the complex structure of political ideology⁴. Pagan beliefs, dominant before the arrival of Christianity, maintained their influence through subsequent epochs. The repercussions of this culture, which spread to almost all aspects of life, manifested themselves both in religious finds and in everyday objects. Yenikapı excavations present us with pagan-inspired finds from the 2nd to the 9th century AD. From a

¹ P. Brown, *Geç Antik Çağda Roma ve Bizans Dünyası*, trans. Turhan Kaçar, Istanbul 2000, p. 49.

² R. Arslan, "Troia'nın Öcü", *Atlas*, issue 47, Istanbul 1997, p. 36.

³ W. Müller-Weiner, *Bizans'tan Osmanlı'ya İstanbul Limanları*, trans. Erol Özbek, Istanbul 2003, p. 8.

⁴ G. Ostrogovsky, *Bizans Devleti Tarihi*, trans. Prof. Dr. Fikret Işıl-tan, Ankara 1981, pp. 25-30.

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marble statue dated 2nd century AD and used as a gravestone with the inscription, "Lollia Serenia lived for 12 years"⁵ (catalogue no. Y55), to a pottery sherd (catalogue no. Y61) dated to the 9th-11th century AD, with a bas-relief depiction of a temple entrance, the pagan influence appears to have been prevalent almost everywhere.

Christianity was in a long-winded conflict, at times escalating into violence, with paganism. In 394 AD, Theodosius I had enacted a law that included ruthless stipulations against paganism⁶. His successor Arcadius made his share of amendments to these laws with a similar attitude. In addition to these laws enacted before his reign, Emperor Theodosius II further prohibited pagans from being appointed to any civil or military positions in 416 AD⁷. Despite these attempts, a deep-rooted pagan tradition continued to exist among the masses that were forced to convert to Christianity, as well as to a segment of the ruling class, particularly with intellectual support from the philosophy of "Neo-Platonism." A good example of this is the two Nike bas-reliefs on the base of the 5th-century "Marcianus Column" located in Istanbul's Fatih quarter⁸. Dated to the 5th-7th century, an ivory icon plaque fragment (catalogue no. Y58) ornamented with laurels and a depiction of Nike with a grape leaf in her hand has been discovered in the Yenikapı excavations.

The icon fragment indicates that the effect of paganism was still prevalent during this period. Nonetheless, paganism lost its power in the ensuing years and was eventually eradicated.

The Church was based on a strong political and economic union established across the vast Roman geography. It derived its strength from this base and perpetuated it. In time, the impact of this power transported the Christian culture to a universal level⁹. From 381 to 457 AD, the city-states of Constantinople and Alexandria were in conflict over the monopoly of the church. A series of councils were held to discuss this conflict¹⁰. During this period, there were differences of opinion among the Christians as well, and the segments in dissent continued to exist as sects or opposition groups¹¹. These sects were seen predominantly in the Eastern Roman Empire. Still, pious individuals oppressed by the government during the first years of Christianity did occasionally seek seclusion and chose to live in the desert. Unable to stand the persecution of Emperor Decius (249-251 AD), "Saint Paul, the first Hermit" fled to the Theban desert of Egypt and led a "monastic" life, a word which literally means living a life of solitude in Greek. The increasingly polarized cultural, political and dogmatic differences between the churches of the East and the West, on the other hand, resulted in the complete separation of the two churches in 1054.

In the course of its religious evolution, Christianity also made room for the development of uniquely Christian liturgical art forms. Among these, iconography, as a product of Byzantine art, parallels political developments across the Byzantine Empire¹². Eastern iconography was far stronger than its Western counterpart. During the reign of Emperor Justinian (527-565 AD), the widespread production of icons is consistent with the spread of Christianity. In the subsequent period, based on the second¹³ of the Ten Commandments in the Old Testament, a strong movement was initiated against icon worshippers. Etymologically derived from the Greek word "eikonoklastes" (iconoclast or "image breaker"), this period is known as the Iconoclastic Period (MS 726-843)¹⁴. During this period, icons were replaced by symbolic motifs such as the cross and the star¹⁵.

While Eastern art predominantly focused on the resurrection of Jesus Christ, the art of the West focused on his crucifixion¹⁶. The "Jesus Christ on the Cross" figurine (catalogue no. Y64) discovered at an Ottoman workshop building within the Marmaray excavation borders in Yenikapı, is a late reflection of this phenomenon.

⁵ Translated by Istanbul Archaeological Museums Greek and Latin Language specialist Feza Demirkök.

⁶ G. Young, *Constantinople*, London 1992, p. 32.

⁷ M. Grant, *Roma'dan Bizans'a İS 5. Yüzyıl*, trans. Z. Zühre İlk-gelen, İstanbul 2000, p. 82.

⁸ E. R. Öneş et. al., *Fatih İlk İstanbul*, İstanbul 2003, p. 17.

⁹ S. Katz, *The Decline of Rome and Rise of Medieval Europe*, 1955, p. 150.

¹⁰ Council of Iznik (Nicaea) 325 AD; First Council of Constantinople 381 AD; Council of Ephesus 431 AD; Council of Chalcedon 451 AD; Second Council of Constantinople 553 AD; Third Council of Constantinople 680-681 AD; Second Council of Iznik (Nicaea) 787 AD; Fourth Council of Constantinople 869-870 AD.

¹¹ M. Grant, *Roma'dan Bizans'a İS 5. Yüzyıl*, trans. Z. Zühre İlk-gelen, İstanbul 2000, p. 84.

¹² Ö. Şarlak, F. Özer, "Post Bizans Dönemi'nde İstanbul'da ikona üreten ressamalar ve üslup özellikleri" *ITU Magazine* I, 2002, p. 60.

¹³ Exodus from Egypt 20: 4.

¹⁴ Those who defended the worship of icons believed that they carried a symbolic value and that they were consecrated once they were created. Iconoclasts, on the other hand, rejected the sanctity of idolized representations.

¹⁵ Ouspensky, *Theology of the Icon I*, New York 1992, p. 67.

¹⁶ M. Grant, *The Climax of Rome*, New York 1993, p. 244.



1. Burial ground discovered in Plot 100

Apart from small finds that demonstrate the importance of faith, the burial chambers (fig. 1) identified in the area designated as Plot 100, as well as the church and the grave ruins within the metro dig borders, are of particular importance. The underground burial chambers encountered at Plot 100 and known as *hypogeum* – the earliest examples of which can be found among the tombs of Mesopotamian kings – have been identified at two different points in the area (fig. 2). Comprised of four chambers, the *hypogeum* on the west end of the area has yielded only a single skull. It is highly probable that the three other chambers were destroyed at different periods. Scattered human skeletons have been encountered in the other *hypogeum*. Apart from the *hypogea*, eleven other graves were discovered in this area. Ten are graves of adults, while one is the grave of a child.

The church located at the northern section of the metro project-archaeological excavation site is perhaps the most important discovery. A total of 22 graves have been discovered inside and around the church structure (fig. 3). Since two of these include two separate burials

on top of one another, the number of total skeletons amounts to 24. Five of these are graves of children. Although these finds are predominantly dated to the 13th century, the most recent studies conducted to the west yielded 12 coins over one grave. Dated to the late 10th-early 11th centuries, these coins indicate that the church could be dated to an earlier period than originally assumed. A majority of the graves were excavated after the church was no longer in use, considerably damaging the church walls. With the exception of the two graves located in the northern nave, there are no other graves within the structure.

The fact that the graves identified in both regions are dated to the Byzantine Period leads us to focus on the cults and rituals of the deceased. Combining the previous Mediterranean civilizations' ideas on death and rites for the dead with Christianity, Byzantium reached a unique cultural synthesis in this respect¹⁷.

The burial practices of the Byzantines – the preparation, the interment and the memorial services – are rooted in ancient Greek, Roman and Jewish traditions.

2. Hypogeum discovered in Plot 100



¹⁷ E. Akyürek, *Dünya Kültürü*, İstanbul 1996, p. 75.

Initially a fervent opponent of pagan practices, the church came to realize that it could not entirely disregard these practices. So, it Christianized a significant number of them and reinstated them as official practices of the Church¹⁸.

To prepare the dead, the Byzantines would place the body on a low bier. Later, the mouth and the eyes would be shut to prevent the lower jaw from sagging open. The arms and legs would be tied in a straight and tight manner and the head would be tied in a way that would prevent it from falling to the right or left. Next, the body would be washed and anointed with oil. The washing and anointing of the dead is a tradition from Mediterranean civilizations, from ancient Greek, Roman and Jewish societies and it was thus adopted by Christianity. Following these preliminary preparations, the body of the dead would be wrapped in a white linen fabric. Then the dead would be interred either in this shroud or after being dressed in his/her clothes over the fabric. Since the time of Homer, naked burial was regarded as disrespectful to the dead. The Bible indicates that before he was buried, Jesus Christ was wrapped in white linen cloth. In the Byzantine tradition, the arms would be crossed at the chest and the legs would be tied to one another. Finally, the dead would be ready for the *prothesis*¹⁹ ceremony. After this, the deceased would be accompanied by the funeral procession to the place of burial. If the deceased were a holy person, the participants at the funeral would receive a piece of a relic²⁰. In the course of the ritual, the dead faced east, and candles and incense would be burned around his/her body. All these practices were acculturated by Christianity from pagan traditions²¹.

The Yenikapı excavations reveal that some of burials took place in simple graves where the deceased were directly interred in the ground (fig. 4). In a number of others, the grave was created by placing the dead on bricks set on excavated earth and surrounding the circumference with finished stones. Of the 35 graves, 29 belong to adults and 6 belong to children. One of the children's graves has collapsed, while others are created by vertically placing terracotta bricks and covering the top.

A portion of the grave site has been destroyed for various reasons. With two exceptions, all the bodies are placed from east to west. The intact skeletons reveal that the dead were placed on their backs and that their arms were crossed on the abdomen. Bricks used as a cushion have been discovered underneath the skeleton of a child. The arms of the dead are nearly fastened to the bo-



3



4-5



6

3. Church within the Metro excavation site

4. An example of the simple burial technique found in Plot 100

5. Examples of the graves surrounded by neat stones, discovered around the church within the Metro excavation site

6. Bronze cross, discovered in situ inside Grave 8 to the north of the church within the Metro excavation site

¹⁸ E. Akyürek, *Bizans'ta Sanat ve Ritüel*, İstanbul 1996, p. 174.

¹⁹ Meaning "presentation" in Greek, this ritual of pagan origin involved the preparation of the deceased for display and a kiss (*aspasmos*) by his/her loved ones for one last time. (P. J. Fedwick, "Death and Dying in Byzantine Liturgical Traditions" *Eastern Church Review*, v. VIII, London, 1976).

²⁰ Name given to the bones or possessions of a sacred figure.

²¹ E. Akyürek, *Dünya Kültürü*, İstanbul 1996, pp. 81-85.

dies and the graves are particularly narrow. These two factors indicate that the Byzantines tightly wrapped their dead before interment (fig. 5).

Though few in number, grave finds were encountered in some of the graves discovered at Yenikapı. Among these are a bone and a bronze crucifix, an ampulla, a teardrop bottle, and a flat axe made of serpentine. Only the bronze crucifix was found *in situ* above the right side of the chest (fig. 6). None of the others came from the interior of a grave but were discovered in the surrounding area.

Ampullae were found both in graves and in different areas of the excavation site. Both sides of the ampullae are ornamented with the frontal depiction of a figure at the centre surrounded by a dotted border and a cross on either side (catalogue no. Y60). These objects are of particular importance, as they are associated with the cult of Saint Menas near the Alexandria River in the Middle East²².

The religious artifacts discovered on site have a great diversity. The best example of this is the lead seal appliqué inside a sea shell. The seal features a block monogram popular in the 5th-7th centuries. The letters Alpha and Omega are inscribed inside the sea shell. Sometimes flanking Jesus Christ's portraits, the letters symbolically convey the message, "I am the beginning and the end." The monogram²³ found on the seal (catalogue no. Y59) excavated at Yenikapı also includes the letters Alpha and Omega.

Ottoman ware found in the upper strata include bowls with inscriptions of prayers and poetry (catalogue no. Y66) and ceramics with engraved tulip motifs (catalogue no. Y65). In Sufi literature, the red tulip symbolizes the blood of the Prophet's martyred son, Husayn as well as the devotion of the soul that reaches out to God, a tradition that continued in Sufi literature until the 18th century. The symbol of God (Allah) is not confined to the tulip alone. For instance, due to its vertical and straight form, the cypress tree evokes "Alif", the first letter of the word Allah. Tulips and the colour red are also employed in architectural, as well as tile and ceramic ornamentation as religious symbols.

In the overall assessment of the finds discovered at the excavation site, it appears that a large portion of the excavation area was covered with seawater and that the settlements arose only after the area was silted and filled in.²⁴ These finds were discovered in a lively port with intense commercial activity, in the Byzantine capital

where the fate of the nation was determined. Bearing the traces of diverse cultures, this port was the junction of Mediterranean routes where ships from different civilizations docked side by side. Therefore, the finds represent a vast diversity. Istanbul is still one of the foremost cities of Christendom. At the heart of its appeal lies a deep-rooted and rich history. Muhammad had prophesized the conquest of Istanbul to be a blessed event, and today the city maintains its significance for the Muslim world as well.

²² T. Stanley, *Palace and Mosque: Islamic Art from the Middle East*, Hong Kong 2004, pp. 22-23.

²³ The monogram was interpreted by Vera Bulgurlu.

²⁴ Although traces of prehistoric settlement were encountered in the lowest strata, which were still land before the sea was formed, no religious finds from this period have been encountered.

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Technology in Yenikapı

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Artifacts, that can be classified under the heading "technology" in our excavation inventory, have been discovered among the archaeological strata that extend from the Byzantine to the Ottoman periods. The concept of technology brings to mind various images and definitions, most of which are associated with electronic or mechanical devices. Etymologically, the word "technology" is derived from the Greek words *techné* which denotes the skill to do something and *logos* which means "knowledge or principle". According to the *Dictionary of the Turkish Language Institute*, the word "technology" has two definitions. The first, is "the definition of the tools/equipment used in the construction techniques of an industrial branch; the information pertaining to the methods and tools of application". The second is "the entirety of the technical terms particular to the arts, sciences and crafts." As a practical application of theoretical knowledge, the purpose of technique or technology is to convert systematized information into production. That hot air rises is theoretical knowledge. Applying this theoretical knowledge to the hot-air balloon, as a form of transportation, is the actual technique. However, during an age when methods of obtaining theoretical information were not systematized, technological developments were often centred on daily information. "It is all too easy to assume that in making and using fire, for example, Stone Age peoples practiced at least a rude form(?) of 'chemistry'. In fact, however, while both science and technology involve "knowledge systems", the knowledge possessed by food-collectors cannot reasonably be considered theoretical or derivative of science and theories of nature."¹ By becoming traditionalized, daily information is systematized and it subsequently forms the basis of theoretical science. "In addition to being older than science, technology, unaided by science, is capable of creating elaborate structures and devices."² Technology is thus built upon the practical needs of life.

In regarding its history, we can see that technology developed as a result of mankind's power struggle with nature and himself. Overall, we can argue that the needs of human beings function as the driving force and even narrow down the development of technology to a single incentive. If we consider the moment at which our ancestors rubbed one stone against another to make tools as the beginning of technology, we can understand the process of transformation from the tool-making, primitive man to his modern counterpart mastering space technology. The history of technology runs parallel with the history of cultural evolution, and the accumulation of infor-

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¹ McClellan III J. E.-H. Dorn, *Dünya Tarihinde Bilim ve Teknoloji*, Ankara 2006, p. 14.

² Basalla, George, *Teknolojinin Evrimi*, Ankara 2004, p. 37.

mation behind a number of "simple" objects that modern humans use in daily life. The culture of technology transmitted by acculturation from generation to generation and from society to society, has become traditionalized among human beings and has jumped to a new level with changes that occur within the same tradition. "Each new tool of production introduces new experiences and generates new professions. The transformation of the work tools of mankind and the transformation of mankind as a result of the transformation of its work tools, has necessitated the transformation of production relations as well."³ Periodic innovations alter the social and economic structure as well as production-relations of societies. This change entails the renewal of social organization, means of production, and by extension, the development of technology. This mutual relationship constitutes the basic dynamic of societal development. The history of ordinary objects of daily life is the history of mankind's ability to think three-dimensionally and to create abstract

designs. In this respect, archaeology interprets uncovered finds in light of the methods of theoretical science and bestows them upon history.

The archaeological excavation sites of the Yenikapı Metro and Marmaray projects were used as a port during the Byzantine Era, and predominantly as agricultural fields (Langa Gardens) during the Ottoman Period. Due to the level of urbanization during both the Byzantine and Ottoman periods, the area is not only rich in architectural finds, but is also well-preserved.

"The port was located at the point where the, Lycos (Bayrampaşa) River poured into the Sea of Marmara. A second port named Portus Theodosiacus (Port of Theodosius) was founded, possibly by Theodosius I (379-395), in the 12th Ward, in a bay that formed a considerable indentation into the shoreline."⁴ In terms of its location, the port was exposed to south winds and, by extension, to the danger of being silted up with alluvium. Yet, despite its disadvantages, the port was established

1. Stone anchor discovered alongside the wooden stakes of the jetty
2. Stone anchor with wooden nails
3. Anchor tied with rope



³ Hancıoğlu, Orhan, *Felsefe Ansiklopedisi Kavramlar ve Akımlar*, İstanbul 1979, vol. 6, p. 278.

⁴ Müller-Wiener, Wolfgang, *Bizans'tan Osmanlı'ya İstanbul Limanı*, İstanbul 2003, p. 8.

here because the area was easily defensible, broad, and dominated the Sea of Marmara. We know that the Port of Theodosius received a variety of goods, particularly grain, from Egypt and North Africa. We can assume that, during the period at which the empire was at the peak of its powers, so was the port, in terms both of function and capacity, and that its care and maintenance were supervised on a regular basis. "However, in the 7th century, the port lost one of its most significant functions due to the cessation of grain shipments imported from Egypt and was perhaps used by the fishermen residing at its southern end."⁵ In tandem with Byzantium's loss of its powers in Mediterranean trade, the port lost its significance as well. Clavijo's contemporary, Cristoforo Buondelmonti of Florence provides us with a careful depiction of the city, the plans of which he has drawn: "The shores of the Marmara Sea appeared to have been abandoned, The Port of Vlanga (former Ports of Eleutherios and Theodosius) were silted..."⁶. Engravings and journals from this period reveal that a considerable portion of the

harbour was silted prior to the conquest of Istanbul. During the Ottoman Period, on the other hand, attempts were made to develop the space, and the area was opened for settlement, particularly by the Orthodox Christian population. In light of the finds, we can say that the fertile-soil (alluvium) sections of the area were used for agriculture, and there were workshops for fabric painting, leatherwork, and textiles.

Overall, the harbour's seabed is filled with deposits. The finds excavated on site indicate that the same conditions also apply to the Port of Theodosius. These finds are comprised of works that we think are directly associated with port life, as well as objects and materials related to the city, which we can define as urban waste. In reference to the Port of Theodosius' fall from grace, Müller-Wiener writes, "after all, this region – much like the shorelines of the Golden Horn – must have evolved into a convenient place to dispose of debris for the inhabitants of the neighboring vicinity"⁷; his speculation parallels our assumption.

4. Tackle with wooden spool (nautical equipment)
5. Wooden spool (nautical equipment)
6. Wooden rope buckle (nautical equipment)
7. Wooden spool discovered with hawsers (nautical equipment)
8. Hawser (nautical equipment)

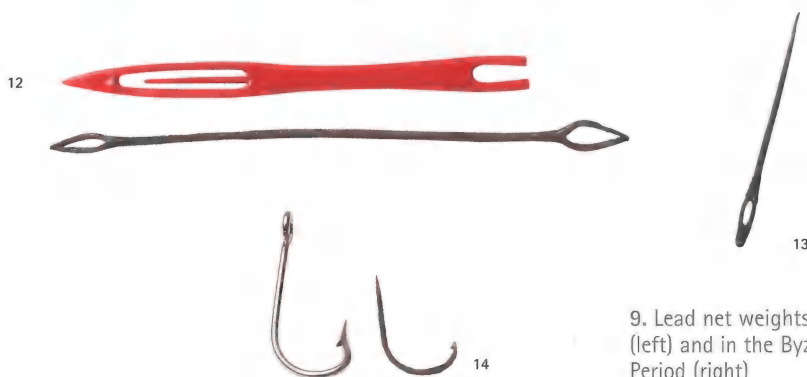
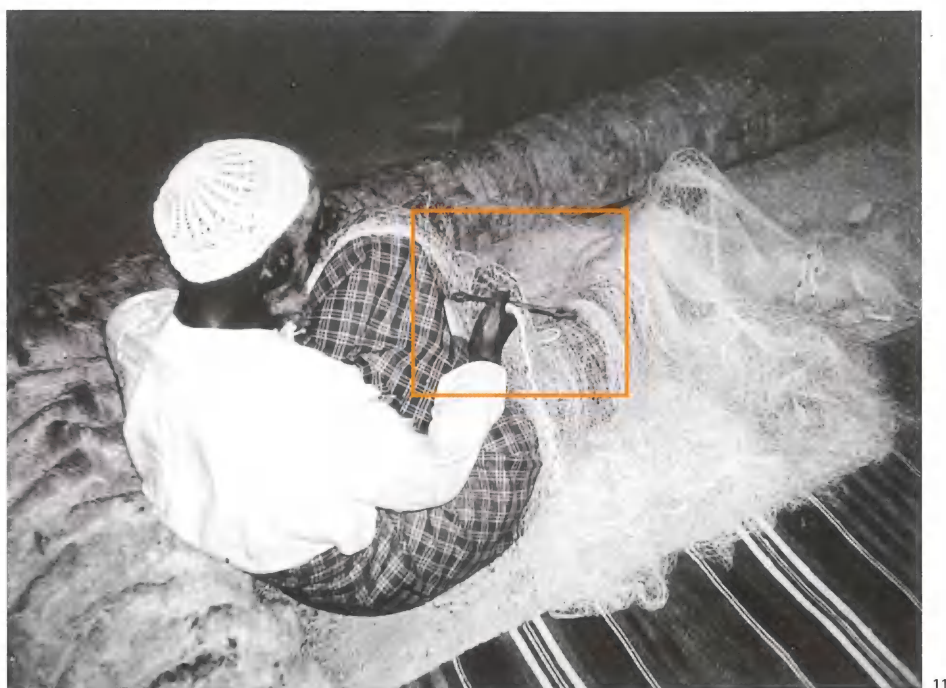


⁵ Ibid., p. 9.

⁶ Mantran, Robert, *Istanbul'un Tarihi*, Istanbul 2001, p. 177.

⁷ Müller-Wiener, Wolfgang, *Bizans'tan Osmanlı'ya İstanbul Limanı*, trans. Erol Özbek, Istanbul 2003, p. 9.

The finds classified under the heading of technology offer information about the seafaring, fishing, and everyday technologies of the age in which they were used. The majority of these objects must have been produced and employed to meet the needs of port life. Apart from inorganic finds such as iron anchors, lead weights for fishing lines and nets, netting needles, locks, fishhooks, stone anchors, terracotta pots and weights, and amphora lids, organic finds such as leather sandal soles, wooden bow drill, a comb, pottery, boxes, spoons and textile pieces have been well-preserved to this day by the sea sand with which they were immediately covered. These finds show significant similarities to their counterparts today. However, the materials of some of these tools are different from their modern-day counterparts. For instance, the lead netting needle (catalogue no. Y69) and wooden spool (catalogue no. Y75) discovered in the excavation would be produced from plastic, metal or similar materials today. The perfection of their ergonomic and functional features has allowed the objects to maintain their basic form (fig. 1). This is why it is not surprising that a fisherman in Bahrain mends his nets with a netting needle identical to the one (catalogue no. Y70) included among our excavation finds (fig. 2). We can also refer to our finds to illustrate that economic and social conditions diversified technological applications. The lids for the amphorae used to transport wines and olive oil, were produced from pottery and amphorae sherds, as well as tree trunk fragments. It is plausible to think that cost of production was lowered in this manner. A similar case is valid for anchors: the oft-encountered anchors discovered at the Yenikapı excavations are generally made of stone. The mining and processing of metals, which are easily obtained today, was both an arduous and expensive task in earlier eras. A few iron anchors were found in shipwrecks, from which the cargo and equipment could not be salvaged after they sunk. These rare iron anchors, which were quite difficult to forge at the time, were precious enough to be included in the dowries of young brides. Stone anchors, with their low cost of production, on the other hand, were often produced from gathered materials such as stone pitching plates. The wooden claws and rope of the stone and many other anchors (catalogue no. Y68) discovered in our excavation were found intact. Stone anchors are often encountered on the seabed during underwater excavations and because their wooden parts have decomposed, they are difficult to date. However, the stone anchors in question



9. Lead net weights used today (left) and in the Byzantine Period (right)

10. Fishing rod weight used today (left) and in the Byzantine Period (right)

11. A fisherman from Bahrain, using the same netting needle that was used in the Byzantine Period

12. Netting needle, used today (above) and in the Byzantine Period (below)

13. Bronze needle

14. Fishhook used today (left) and in the Byzantine Period (right)

have been identified within strata that can be chronologically dated, alongside typical find groups of the period in which they were used. Thanks to their rare, preserved condition, the production techniques and areas of use of the stone anchors will be determined, providing the opportunity to create timelines and catalogues.

The bronze needle (catalogue no. Y77) and bone awl were possibly a part of the repair kit kept aboard ships to mend damaged sails while in port or during navigation. Another probable part of such a repair kit, the boxwood bow drill (catalogue no. Y74), which is still employed today, was used for the repair of small-scale damage to the ship at anchor or in navigation. Our excavation inventories manifest a great diversity in terms of seafaring equipment as well. However, as the majority of these finds were produced from organic materials, the conservation process needs to be completed. Examples of this kind include the wooden spool (catalogue no. Y75) and the wooden clip (catalogue no. Y76), which we believe accelerated the fastening of the ropes used for sails. Wooden combs, which we refer to as lice combs today, appear in large quantities in the excavation. However, among these, one, which we presume has a different function, has been added to the finds categorized under the heading of "technology". This comb features a handle (catalogue no. Y78) that resembles the handle of a modern-day barber's brush. We believe that this comb was used in the textile industry or in the processing of materials, such as linen or wool. Another intriguing example among the selected finds is a terracotta lid with a portable funnel (catalogue no. Y71), possibly used to pour liquids from wide to narrow-rimmed bowls, or alternatively, in retail sale. The various stages of technological innovation can also be observed through architectural remains from different periods. The loam used as a binding agent in the wattle-and-daub structures of the prehistoric settlement – which parallels its Fikirtepe counterpart – we identified in the course of our work, gives way to a grog composition with air-slaked lime in buildings from the Byzantine and Ottoman periods, identified at various parts of our excavation site. Invented in 1890, cement mortar, which was used in Turkey after 1912, is the final stage of this development. The construction technique of garden wells (*bostan kuyusu*) identified in the course of our excavation also provides us with a method example that can be used today. During the construction of a pentagonal 18th-century well, in order to access a deeper level in the sandy ground, fine wooden plates were put side by side

and driven into the ground to convey a square plan and subsequently, the embedded plaques were tied to one another. This way, the sides of the well were reinforced and the interior was emptied out. Based on this technique, during displacement work in the southern part of our excavation area, this same technique was applied safely to dig and empty out the area. The thin but wide timber piles used 300 years ago were replaced by a "pile sheet system" created by wide steel-pile sheets.

Shipwrecks constitute one of the most important categories of finds discovered in our excavations. The shipwrecks discovered at Yenikapı contain valuable information about ship construction techniques and their evolution. After they sunk, the ships were rapidly covered by sea deposits. This has preserved the ship's timbers to this day. Social, economic and environmental conditions are determining factors in the evolution of ship-construction techniques. The transformation of these conditions, on the other hand, had a significant impact on periodic changes in ship-construction techniques. "For ancient and medieval men, the Mediterranean had a deserved reputation for benevolence. Compared to the Atlantic and the North Sea, it offers favourable conditions for navigation for many more months of the year (...) Similarly, the tides, which so governed navigation at the North Sea as to affect the evolution of ship design, are virtually absent in the Mediterranean, except in certain narrows. The many islands scattered throughout the northern half of the sea reduced the need to make long voyages out of sight of land throughout and thus promoted maritime traffic in an age of small ships."⁸ The chronology of the shipwrecks from the Byzantine Period is set on a timeline between the 7th-8th century and the 11th century. The shipwrecks discovered in the excavation can be categorized as cargo ships and oared merchantmen. "Ordinary merchantmen of the Byzantine Empire from the seventh to the eleventh centuries were small, of less than 250 tons deadweight tonnage, were powered by a single lateen sail, were steered by two steering oars on the stern quarters, had curved stemposts and sternposts giving the hull configuration of a rounded look, and had no deep keel. These characteristics remained the norm for all Mediterranean sailing ships to the end of the thirteenth century."⁹ Often small or medium-sized, these ships were distinct from the very large ships of the Roman Empire in terms of their construction technique. Embracing the Christian faith had significantly decreased slave la-

⁸ Pryor, John H., *Akdeniz'de Coğrafya, Teknoloji ve Savaş: Araplar, Bizanslılar ve Türkler*, İstanbul 2004, p. 29.

⁹ Ibid., p. 43.

bor at great expense in terms of labor cost. Consequently shipbuilding had to resort to more practical and cost-effective techniques. "By around the seventh century, a number of important changes had occurred since the late Roman Period. Ships had become much smaller, or at least the very large grain ships of the Roman Empire had disappeared."¹⁰ The general view with respect to shipbuilding techniques is that - as of the 7th century - shipwrights had begun to abandon the old technique of building up the "hull planking first" by fastening one plank to another and afterwards inserting ribs for strengthening. Instead, they began to build the ships' skeletons of ribs first and then to add the planks afterward, nailing them to the ribs. This process, which prompted the emergence of modern ship construction techniques, was completed by the 11th century. Work conducted by our advisor Assoc. Prof. Cemal Pulak on shipwrecks from the 11th century - the period in which

modern ship building techniques emerged - reveal that the old and new ship construction techniques were employed together during this period. As a result of the initial studies on ship construction techniques, we can state that the developmental process in question is neither so linear nor categorical as presumed.

In conclusion, referred to as rescue operations, excavation work, conducted as part of a massive construction project, continues at the Historic Peninsula, the heart of Istanbul, one of the oldest and largest metropolises of the world. We are currently living in a period in which it is of grave importance to educate our children. The scientific excavation work conducted in this context is at least as important as the colossal construction project. We are certain that the true value of these works, which will shed light not only on urban history but on the history of humanity as well, will be appreciated even more deeply in the future.

¹⁰ Ibid., p. 43.

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The geo-archaeological significance of the ancient port of Theodosius at Yenikapı:

Late-holocene environmental changes and the cultural history of Istanbul over the last ten thousand years

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Introduction

In the course of the preliminary work conducted as part of the Marmaray Railway-Tube Transit project, the remains of the ancient Port of Theodosius have been excavated by the Istanbul Archaeological Museums in Yenikapı. Underneath the port remains lie a sedimentary deposit accumulated over the last eight thousand years. This deposit reflects environmental changes of the Sea of Marmara region and the cultural history of the Istanbul metropolis. The excavation area in question is of particular importance for expanding our knowledge of the geological history of the Sea of Marmara's Holocene Period and for filling in missing information. The excavations also serve as a guide in evaluating Istanbul's ten-thousand-year history of settlement and of the natural environment as a whole.

Due to its two most outstanding characteristics, the Sea of Marmara is rather appealing to scientists and scholars. 1: Through the straits, the Sea of Marmara connects the two large and semi-closed basins of the Black Sea and the Mediterranean, which are oceanographically and hydrologically distinct from one another. 2. Over the past five million years, an uninterrupted tectonic activity is observed at the Sea of Marmara.

1. As an inland sea set between the Thracian and the Anatolian peninsulas, the Sea of Marmara facilitates the low-salinity inflow of water from the Black Sea to blend with the high-salinity inflow of water from the Mediterranean via the Istanbul and Dardanelle straits. This connection of neighboring seas is controlled by narrow and shallow straits and by the depth of the sills in these straits. There are two sills at the Istanbul Strait. One is located at the north entrance at a depth of 60 metres, while the other is located at the south entrance at a depth of 30 metres¹. The depth of the sill at the Dardanelles is approximately 60 metres. These topographic barriers to the straits not only control the exchange of water between the two basins and the circulation of the deep waters, but they also played an important role in the oscillation of the water level in the Later Quaternary Period. In the Last Glacial Epoch of the Ice Age (18 thousand calendar years ago), a decrease in sea level to far below today's level, cut off the connections of the Marmara and Black Seas with the Mediterranean. The shelf areas of the Sea of Marmara were exposed to land erosion, and the rivers expanded their deltas². With the rise of sea level worldwide, connection with the Mediterranean was provided through the Dardanelles approxi-

¹ E. Gökaşan et.al., "On the Origin of the Bosphorus", *Marine Geology*, 1997, issue 140, pp. 183-199.

² M. N. Çağatay et. al., "Last Glacial-Holocene Palae-Oceanography of the Sea of Marmara: Timing of the Last Connections with the Mediterranean and the Black Sea", *Marine Geology*, 2000, issue 167, pp. 191-206; A. E. Aksu et.al., "Oscillating Quaternary Water Levels of the Sea of Marmara and Vigorous Outflow into the Aegean Sea from the Sea of Marmara-Black Sea Drainage Corridor", *Marine Geology*, 1999, issue 153, pp. 275-302.

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mately twelve thousand years ago³. However, the form and timeline of the connection established with the Black Sea is still a topic of debate. According to one view, immediately after the connection with the Mediterranean – nearly 11,000–9,000 years ago – the waters of the Black Sea vigorously and continually flowed into the Sea of Marmara (Stanley and Blanpied, 1980; Çağatay et al., 2000; Aksu et al., 2002). Yet another view poses that during the period in question, the shelf areas of the Black Sea were still dry land, but that with the inflow of Mediterranean waters through the Istanbul Strait 8,400 years ago, the sea level rose, covering the shelf areas⁴. A third approach distinct from these two views is that, throughout the Holocene Era, the sea level at the Black Sea displayed transgressive and regressive circulations, independent of the global sea level⁵.

2. Due to its setting at the transition zone between the lateral-displacement North Anatolian Fault Zone (NAFZ) and the extensional regime of the Aegean Sea, it is tectonically quite active. The NAFZ has a significant impact on its morphology. Since the 17 August, 1999, earthquake, scientific research in the Sea of Marmara basin has intensified⁶. Nonetheless, studies of the fault movement in Istanbul and its environs, as well as how Istanbul is affected by the tectonic activity in the Sea of Marmara, are limited in number⁷.

The natural sedimentary deposit at the Port of Theodosius signifies a timeline of nearly ten thousand years and contains cultural and architectural remains from different epochs. Thus, it provides a perfect opportunity to study the cultural history and geology of the region. Furthermore, the gathering of diverse disciplines around geo-archaeology creates a unique synergy.

The significance of sedimentary deposits

Underneath the debris infill in the excavation area, there are two distinct types of deposits: fluvial and marine deposits (Fig.1). The rubble infill (P1) includes Byzantine ruins, Ottoman-Period agricultural soil and remains from the recent past. There is a fluvial sedimentary deposit underneath the rubble infill. It is approximately 3 metres thick, and it is created by the deposits of the clastic materials carried by the Lycos (Bayrampaşa) River that flowed across Vatan Street until the early 1950s. This deposit contains three units in which gradational and coarse-grained

³ D. J. Stanley and C. Blanpied, "Late Quaternary Water Exchange Between the Eastern Mediterranean and the Black Sea", *Nature*, 1980, issue 285, pp. 537–541; M. N. Çağatay et al., "Last Glacial-Holocene Palae-Oceanography of the Sea of Marmara: Timing of the Last Connections with the Mediterranean and the Black Sea", *Marine Geology*, 2000, issue 167, pp. 191–206; A. E. Aksu et al., "Oscillating Quaternary Water Levels of the Sea of Marmara and Vigorous Outflow into the Aegean Sea from the Sea of Marmara-Black Sea Drainage Corridor", *Marine Geology*, 1999, issue 153, pp. 275–302; A. E. Aksu et al., "Last Glacial-Holocene Pale-Oceanography of the Black Sea and Sea of Marmara: Stable Isotopic, Foraminiferal and Coccolith Evidence", *Marine Geology*, 2002, issue 190, pp. 119–149.

⁴ W. B. F. Ryan et al., "An Abrupt Drowning of the Black Sea Shelf", *Marine Geology*, 1997, issue 138, pp. 119–126; W. B. F. Ryan et al., "Catastrophic Flooding of the Black Sea", *Annu. Rev. Earth Planet. Sci.*, 2003, issue 31, pp. 525–554.

⁵ P. V. Fedorov, *The Pleistocene of the Ponto-Caspian*, Moscow 1978; A. L. Chepalyga, "Inland Sea Basins", Late Quaternary Environments of the Soviet Union, A. A. Velichko, H. E. Wright and C. W. Barnosky, University of Minnesota Press, Minneapolis 1984, pp. 229–247; Yanko, Gilbert and Dolukhanov (eds.), *The Black Sea Flood Question: Changes in Coastline, Climate, and Human Settlement*, NATO Science Series IV – Earth and Environmental Sciences, Kluwer Academic Press, Springer, Dordrecht 2007, pp. 603–631.

⁶ C. İmren et al., "The North Anatolian Fault Within the Sea of Marmara: a New Evaluation Interpretation Based on Multi-

Channel Seismic and Multi-Beam Bathymetry Data" *Earth and Planetary Science Letters*, 2001, issue. 186, pp. 143–158; F. Y. Oktay et al., "The Effects of the North Anatolian Fault Zone on the Latest Connection Between Black Sea and Sea of Marmara" 2002, *Marine Geology*, issue 190, pp. 367–382; E. Gökaşan et al., "Evidence of NW Extension of the North Anatolian Fault Zone in the Sea of Marmara: a New Interpretation of the Sea of Marmara (İzmit) Earthquake on 17 August, 1999", *Geo-Marine Letters*, 2002, issue 21, pp. 183–199; E. Gökaşan et al., "Morpho-Tectonic Evolution of the Sea of Marmara Inferred from Multi-Beam Bathymetric and Seismic Data", *Geo-Marine Letters*, 2003, issue 23, p. 1933; T. Sato et al., "A Study of Micro-Earthquake Seismicity and Focal Mechanisms Within the Sea of Marmara (NW Turkey) Using Ocean Bottom Seismometers (OBSs)", *Tectonophysics*, 2004, issue 391 pp. 303–314; A. Polonia et al., "Holocene Slip Rate of the North Anatolian Fault Beneath the Sea of Marmara", *Earth and Planetary Science Letters*, 2004, issue. 227, pp. 411–426.

⁷ S. Erinc, *Boğaziçi eşiğinde morfoloji araştırmaları*, Istanbul University Faculty of Letters Unpublished Thesis, 1940; F. Y. Oktay and M. Saking, "Tectonics Activities Causing Development of the Bosphorus During the Late Quaternary", Turkish Quaternary Workshop Paper Abstracts, 1993, p. 31; Y. Yılmaz, "Morphotectonic Development of the Southern Black Sea Region and the Bosphorus Channel", eds. Yanko-Hombach, V., Gilbert, A., Panin, N., Dolukhanov, P., *The Black Sea Flood Question: Changes in Coastline, Climate, and Human Settlement*, NATO Science Series IV – Earth and Environmental Sciences, Kluwer Academic Press, Springer, Dordrecht 2007, pp. 537–569.

ingradational sediments are present in consecutive order (P2, P3, P4). Broken and well-rounded fragments of ceramics and other objects are common in the top unit. Among the 6th-century strata, the effects of a tsunami, possibly caused by the 553 AD earthquake have been observed⁸. In the lower sections of the fluvial deposit, among the light-coloured sand, there are various levels comprised of unsorted fine and coarse pebbles. The cause of such lithological changes can be attributed to the change in the materials carried by the Lycos River due to short-term climatic changes or certain local tectonic events.

The border between the fluvial and marine deposits is located inside light-yellow homogenous sands, and it is gradual (P5). The upper portion of the marine deposit is represented by the light-yellow sands that contain a plethora of broken amphorae fragments discharged here during the construction of the Byzantine port (P6). This deposit is comprised of eight units, in which fine-grained sediments are stored, representing a shallow shore environment, containing fine sand in various places (P6-P13). Underneath the gray shale in the lower section, there exists a unit that consists of sand and broken marine shells, approximately 1 metre thick. Architectural and settlement remains from the Neolithic Period (8-6 thousand years ago) and Iron Age (5 thousand years ago) have been discovered underneath this shelled-sand level. Based on the level at which the remains have been discovered, during Neolithic settlement, the sea level was 10 metres lower than it is today. Approximately 8 to 6 thousand years ago, following a rise in sea level, the seafloor area of the excavation site must have been flooded by water all the way up to the mouth of the Lycos River. As a result of the deceleration of global sea level's rising upon reaching -10 metres nearly 6 thousand years ago⁹, the

Lycos River possibly continued to deposit its sediment load to the coastal area. Tectonic movements may also have contributed to the increase in deposits.

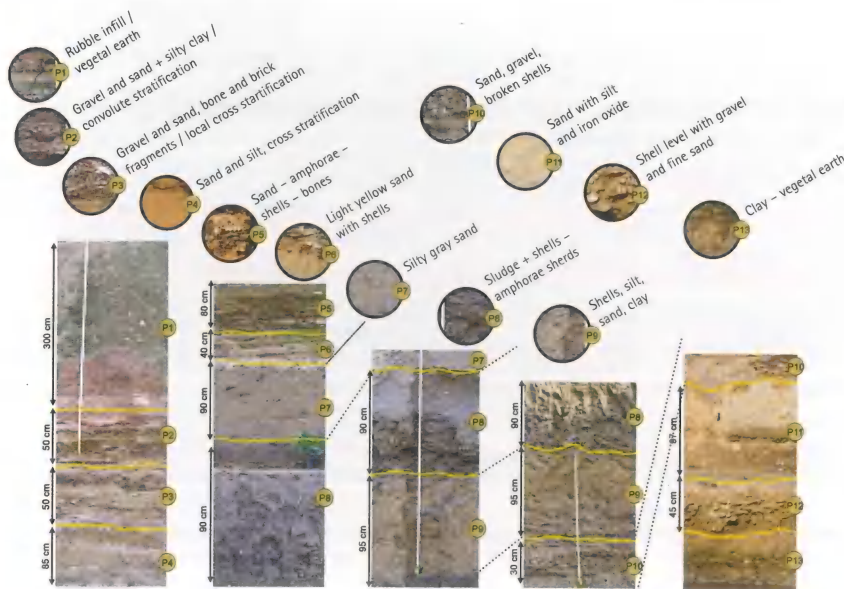
Projected studies

Preliminary studies have revealed that the ancient Yenikapı harbour offers important information about Late Holocene sea-level changes, environmental changes at the Sea of Marmara, and the cultural history of the Istanbul metropolis. A multidisciplinary research program has been created to identify environmental changes in the excavation area and their impact on cultural history. The important topics to be addressed in this context are listed below:

1. To study and date the sedimentary deposits from the Lycos River and the Sea of Marmara coastal environment, to understand the changing environmental conditions. Within this framework, the temporal and spatial distribution of sedimentological, paleontological, mineralogical, and anorganic/inorganic geochemical characteristics will be examined.
2. To combine the environmental changes (changes in sea level and climate) at the Sea of Marmara during the Late Holocene Period with the changes in the deposit environments. In this manner, our knowledge of the establishment of the connection between the Black Sea and the Mediterranean Sea will be expanded and the voids in its history will be filled.
3. To research the traces and remains of natural disasters that Istanbul has been exposed to.
4. To evaluate the archaeological and geological eviden-

⁸ D. Perinçek et.al., "Yenikapı antik liman kazılarında jeoarkeolojik çalışmaları ve yeni bulgular", 60th Turkish Geology Symposium, 16-22 April 2007, Ankara.

⁹ R. G. Fairbanks, "A 17,000-Year Glacio-Eustatic Sea Level Record: Influence of Glacial Melting Rates on the Younger Dryas Event and Deep-Ocean Circulation", *Nature*, 1989, issue 342, pp. 637-642; E. Bard et al., "Deglacial Sea-Level Record from Tahiti Corals and the Timing of Global Melt Water Discharge" *Nature*, 1996, issue 382, pp. 241-244; P. A. Pirazzoli, "A Review of Possible Eustatic, Isostatic and Tectonic Contributions in Eight Late-Holocene Relative Sea-Level Histories from the Mediterranean Area", *Quaternary Science Reviews*, 2005, issue 24, pp. 1989-2001.



ce as a whole to reach a better understanding of Istanbul's natural environment and its cultural history over the last ten thousand years.

5. To protect the deposit through contemporary impregnation techniques and document it for display purposes.

All of these topics are addressed as part of a multidisciplinary research progress report entitled, "Geo-Archaeological Research at the Ancient Theodosius Yenikapı Port: A Study of the Ten-Thousand-Year History of Istanbul's Cultural and Geological Heritage."

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Forensic paleodemography of Byzantine

Dr. Mehmet Görgülü*

The anthropological study of skeleton collections has to be done systematically and in a certain order. Many scales, micro- and macro-morphological methods, and radiological criteria have been established to determine the age, height, physical features, gender, race, occupation, habits, and time and cause of death. These scales and methods also determine the number of skeletons to which these bones belong, injuries to the bones, and information from their teeth. Forensic anthropological studies consist of the following steps:¹

1. Determining that the bones belong to a human being; Then learning how many people these bones belong to and determining their times of death
2. Finding out the age, height, gender, and race of each human
3. Determining the biological features of the human, as well as its socio-economic status and diet
4. Determining skeleton pathology, looking for any anomaly, tumor, osteomyelitis, osteophyte, degenerative joint disease, prosthesis of the skeleton, and so on

Polyvinylacetate (PVA), bedacryl, butvar, avlar, vinac, and similar chemicals in powder form are smoothed into acetone or alcohol and applied to remove the skeleton without damage. If these products are unavailable, peligom (sometimes called glyptal), Superglu™ or Uhu™ or similar glue products can be thinned by acetone or alcohol and applied to the skeleton. If the skeleton is broken into pieces and one of these chemicals cannot be applied, a plaster coating can be used.²

General information

The metric (anthropometry) and morphologic (anthroposcopy) methods used to study living beings and skeletal remains are research methods in biological and forensic anthropology. The roots of these two methods go back to the 18th century, especially when European countries began building empires and differences among colonial peoples began to attract attention. Later these methods, especially anthropometry, helped people to understand human evolution in the first half of the 20th century.³ Anthropometrics were used for the first time in forensic sciences and forensic medicine in 1882.⁴ A French police investigator, Alphonse Bertillon, used anthropometric measurements to establish a criminal identification system. Both anthropometry and anthroposcopy encouraged anthropological studies in human

¹ Krogman, W.M. – İşcan, M.Y. *The Human Skeleton in Forensic Medicine*, Charles C. Thomas, Springfield, Illinois 1986.

² Çöloğlu, A.S.-İşcan, M.Y., *Adli osteoloji*, İstanbul 1998.

³ İşcan M.Y. *Anthropometry*, in: Siegel J. Saukko P. Knupfer G., editors. *Encyclopedia of Forensic Sciences*, pp. 284-90, Academic Press, London 2000.

⁴ Krishan K., "Anthropometry in Forensic Medicine and Forensic Science-'Forensic Anthropometry.'" *The Internet Journal of Forensic Science* 2(1) 2007.

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evolution, differences in population, health and disease, sexual dimorphism, social and environmental factors leading to differences in gender and natural selection, and other evolutionary mechanism principles.⁵

The term anthropometry is a combination of two words from ancient Greek: *anthropos* (human) and *metria* (measurement). Anthropometry means "measuring the human body." More specifically, it means measuring the human body and skeleton for its size, shape and composition. Anthropometry measures the body as a whole and also its interior parts and organs. More recently, anthropometry included not only the size but also the ratio between different parts of the body. (For example, weight versus height or waist circumference versus hip circumference) Thirdly anthropometry includes the measurement of body composition, such as body fat, bone, and muscle ratios.⁶

The study of anthropometry is the study of human quantity; therefore, it is based on measurement. Anthropometry can be divided into two parts. This separation is not technical or methodological. It is divided simply by whether or not the skeletal remains also include soft tissue or dry bones only, or whether the body is alive or a cadaver. The two divisions of anthropometry can be explained as follows.

1. Somatometry When the measurement is done on a live human or on human remains, the anthropometric measuring processes are called somatometry. Leg length, sitting height, shoulder width, and heart weight can be grouped under this heading. (Some experts group living or dead head- and face-measuring and related techniques under another heading called cephalometry.)

2. Osteometry Measuring the entire human skeleton is known as osteometry. Some experts separate head and face measurements into a science called craniometry.⁷

Anthropometric measuring and evaluations had a significant impact on the acceptance of anthropology as a discipline. The term *anthropometry* is first used by the German doctor Johann S. Elsholtz (1623-1688). Elsholtz's graduate thesis (1654) was titled *Anthropometria*. Previously, only artists had studied anthropometry. Elsholtz's thesis attracted the interest of doctors. Later this science spread to the natural sciences and other fields of study.⁸

The International Standard method is used both for skeletons and for live humans. In addition to measurements, pictures and videos from the discovery site are

used for identification. In addition, forensic anthropology employs the human skeleton analysing techniques used at archeological sites. Therefore, these two disciplines are closely related.⁹ (6-8).

On the other hand, anthroposcopy analyzes human body features in a qualitative way. It can be said that anthroposcopy visually investigates what cannot be measured. In forensic anthropology, anthroposcopy is used on skeletons rather than on living beings. The growth of the human body and age assumptions from picture-studies are important. In forensic osteology, the morphological evaluation of osteological remains is an important step within the observation area. This evaluation determines gender and race differences but also helps to explain asymmetry, pathology, and abnormalities. It helps to determine the age, pathology, trauma, and time of death. It can also determine evidence of animal scavenging, along with antemortem, perimortem, and postmortem characteristics.¹⁰

Demography is the science which investigates people, population, population growth, and types. Community population data is obtained from censuses, population science research, and archives. Information obtained from these three sources show differences but reveal vital information about a population's demographics.¹¹

While demographics is a science that defines an actual population, in fact, it can also define population growth or shrinkage as a result of birth, death, or migration. Population science research includes complex information-gathering techniques for population growth, birth and death rates, and age and gender group diversity based on settlement. As a result, demography can be explained as analysing human populations and their statistical definitions.¹²

Paleodemography is a science which researches historical communities and their populations, size, density and mobility. Paleodemography reanimates the population of an ancient community and researches the evolution of that community. Since the 1950's when age and gender criteria were scientifically accepted, skeletal remains have been an important part of paleodemographic studies.¹³

The Byzantine Forensic Paleodemography's work studied the skeletons from Istanbul-Yenikapi-Marmaray excavations. These skeletons were examined by anthropometric and anthroposcopic's methods at Istanbul University, Forensic Medicine Institute.

⁵ 6. İşcan MY. *Anthropometry*, in: Siegel J. Saukko P. Knupfer G., editors. *Encyclopedia of Forensic Sciences*, pp. 284-90, Academic Press, London 2000.

⁶ Emiroğlu, K.-Aydın, S., *Antropoloji Sözlüğü*, Ankara 2003.

⁷ Ibid.

⁸ Ibid.

⁹ 6. İşcan MY. *Anthropometry*, in: Siegel J. Saukko P. Knupfer G., editors. *Encyclopedia of Forensic Sciences*, pp. 284-90, Academic Press, London 2000; Krishan K., "Anthropometry in Forensic Medicine and Forensic Science-'Forensic Anthropometry.'" *The Internet Journal of Forensic Science* 2(1) 2007; Emiroğlu, K.-Aydın, S., *Antropoloji Sözlüğü*, Ankara 2003.

¹⁰ Ibid.

¹¹ Emiroğlu, K.-Aydın, S., *Antropoloji Sözlüğü*, Ankara 2003.

¹² Ibid.

¹³ Ibid.

Findings analysis and paleodemographic characteristics

In the excavation area, a large number of bones belonging to 177 people were found scattered such that their skeletons could not be reassembled. As a result, 177 people's genders, ages and heights couldn't be determined. Table 1 shows these skeletons' distribution.

Table 1: Skeleton distribution

skeleton type	number	ratio
Adult man	24	13.56
Adult woman	44	24.86
Undetermined adult's gender	39	22.04
Children	63	35.59
Fetus	7	3.95
Total	177	100

Table 2 shows the genders of these skeletons. As seen in Table 2, the gender of 109 people couldn't be determined. Seven fetuses were also discovered. 63 bodies were children and 39 bodies were adult.

Table 2: Gender of skeletons

gender	number	ratio
Man	24	13.56
Woman	44	24.86
Undetermined gender	109	61.58
Total	177	100

Table 3 shows the gender ratio of the adult skeletons. Table 3 reveals that gender could be determined for 63.56% of the 107 adult skeletons.

Table 3: Adult skeleton gender ratio

gender	number	ratio
Man	24	22.43
Woman	44	41.13
Undetermined gender	39	36.44
Total	107	100

In this study 102 (57.62 %) of the skeletons' ages and 90 (50.84%) of the skeletons' heights could be determined. Tables 4-6 show the results of these height and age studies.

Age distribution is shown on Table 4. The ratio of deaths for those under the age of fifteen is 59.24%. If the deaths of fetuses are added, this death ratio increases to 66.03%. Following children, the death rate of women is next highest, probably due to childbirth. These ratios are higher than modern figures because ancient populations endured very poor health conditions, particularly malnutrition and infectious diseases. Childbirth was another leading cause of death, which raised women's death rates. We have obtained similar results in studies of other ancient populations.¹⁴

The mean age of the Yenikapi population is 13.76. This is a very low age ratio. The high death rate of children lowers the mean age calculations dramatically.

Table 4: Age (year) distribution

age	number	ratio
Fetus	7	6.80
0-12	17	16.50
1-4.9	31	30.10
5-9.9	7	6.80
10-14.9	6	5.83
15-19.9	7	6.80
20-29	10	9.71
30-39	9	8.74
40-49	8	7.75
50-59	1	0.97
Total	103	100

The overall distribution of height is given in Table 5. In Table 6, only adult heights are given. The mean height of Yenikapi women is 155.22 cm, and for men 169.6 cm. These results show Yenikapi people to have been of medium height.

¹⁴ Aufderheide, A.C.-Martin, C.R., *Human Paleopathology*, University Press, Cambridge 1998.

Table 5: Height distribution

height (in cm)	number	ratio
50-59	2	2.22
60-69	10	11.11
70-79	15	16.67
80-89	6	6.67
90-99	9	10
100-109	7	7.78
110-119	2	2.22
120-129	—	
130-139	2	2.22
140-149	3	3.33
150-159	15	16.67
160-169	10	11.11
170-179	8	8.89
180-189	1	1.11
Total	90	100

Table 6: Adult height distribution

height (in cm)	man	woman	total
140-149	—	3	3
150-159	—	15	15
160-169	6	4	10
170-179	8	—	8
180-189	1	—	1
Total	15	22	37

A mean cephaloindex was established for the women of 78.13, and for men of 72.50. These results indicate that the women were mesocephalic, while men were dolichocephalic. According to this cephaloindex, the people of Yenikapi were of Mediterranean origin.

Skeleton pathology and anomalies of the Yenikapi population

Among the skeletons, there was cribra orbitalia, which is caused by iron deficiency, trachoma, and scurvy in particular.¹⁵ (fig. 1)

There were many schmorl nodules on the vertebrae which appear to have been caused by mechanical stress and senility.¹⁶ (fig. 2)

There were also osteophytes and osteoporosis especially on the lumbar vertebra, indicating that these people engaged in hard physical labor. (fig. 3)

¹⁵ Ibid.
¹⁶ Ibid.



1. Cribra orbitalia
2. Schmorl nodules on the vertebra
3. Osteoporosis on the lumbar vertebra



4



5



8



6



9



7

4. Right femur with corpus thickening
5. Radiological image of the same right femur
6. Left ulna and left radius
7. Radiological image of the same left ulna and left radius
8. A skeleton at one grave site from Yenikapi with arms crossed
9. The position of a skeleton in a grave.

It was determined that the thickening of this corpus femoris was a bone tumor. (figs. 4, 5)

This ulna shows a healed fracture (figs. 6, 7). The radiological image shows the same fracture after it has healed, and with good callus. However, the area between the left ulna and the left radius has developed syn- desmosis, a condition that develops when fractures don't heal properly. This subject wouldn't have been able to make supination or pronation movements; for example, the man couldn't have combed his own hair.

Facial reconstruction sample

Onto the skull of a 30-year-old woman (fig. 12), Dr. Sadi Cagdir of the Forensic Medicine Institution made a facial reconstruction (figs. 13-15).



10



11

10. Some cranial bones from various adult males. The bones of the corresponding skeletons were not found.

11. Mass massacre. In this cavity many bones which belonged to children, men and women were found.

12. Woman's skull

13. Right view of the reconstruction

14. Left view of the reconstruction

15. Left-anterior view of the reconstruction



12



13



14



15

YENİKAPI

Y

Catalogue

Y1

Aryballos

7th-6th century BC

Terracotta

h: 5.2 cm, diameter of rim:

3.1 cm

YKM 06.2502

07.17 ÇÇ

The *aryballos* has a wide rim, ribbon handle, short neck and globular body. Black paint marks on the rim, shoulder and base suggest radial-shaped decoration. Using a faded black-figure technique and incised-decoration technique, an owl is depicted on the body. It is complete.

Özkan Turhan, 1999,
Catalogue no. 122.

RA



Y2

Plate sherd

5th-4th century BC

Terracotta

h: 5.6 cm, diameter of

base: 9.4 cm

YKM 06.2535

07.20 ÇÇ

It has a pinkish fabric, a slightly flaring simple rim, elongated pedestal and black glaze. At the centre of the base, there are four impressed palmette motifs. A large portion of the plate is broken and missing.

Pasinli, A., *Athens Agora*

RA



Y3

Amphora

5th-4th century BC (?)

Terracotta

h: 59 cm, diameter of base:

5.9 cm

MRY'06-3534

07.86 ÇÇ

Reddish, camel fabric, narrow, thin ring rim, elongated neck, double handles that connect from the neck to the shoulder, wide, sharp shoulders, conic body narrowing towards the base, pointed end. A significant portion of the rim and one handle are broken and missing. Often found in Taşoz and environs, Eastern Mediterranean, the Aegean and the Black Sea. Used for transporting wine.

Alpözen, T. Oğuz-Özdaş, A. Harun, Belkaya Bahadır, 1995, p. 79.

RA



Amphora sherd

4th century BC

Terracotta

h: 44.5 cm, diameter of lip:

10.5 cm, width across

handles: 26.5 cm

MRY'06-4260

The amphora has a light-red fabric, narrow rim, thin ring lip, elongated cylindrical neck, and shoulders with sharp angles. The handles reach from neck to shoulder. The body is broken from the neck down. Found on the Island of Chios, as well as in Greece, the Aegean, Anatolia, and Eastern Mediterranean, it is used for transporting wine.

Alpözen, T. Oğuz-Özdaş, A. Harun, Belkaya Bahadır, 1995, p. 85.

RA



Y5

Amphora fragment

Late 2nd century BC-late

4th century AD

Terracotta

h: 51 cm, diameter of

body: 25 cm, l. of neck:

26.2 cm,

diameter of rim: 6.6 cm

MRY'07-4615

It is of red fabric with orange hues, has a narrow, thick simple rim, fluted-funnel neck, and shoulders with sharp angles. The two, triple-fluted handles extend from neck to rim, drop down and connect at the shoulder. The body is broken and missing. The origin is possibly the Aegean region. It is commonly found in Eastern Mediterranean, Southern Russia, Nubia, Iraq, Turkey, Greece, Germany and Brittany and used for transporting wine.

Alpözen, T. Oğuz-Özdaş, A. Harun,
Belkaya Bahadır, 1995, p. 100.

RA



Y6

Amphora rim

3rd-4th century

Terracotta

h: 22.5 cm, diameter of

rim: 8.6 cm, diameter of

neck: 7.5 cm

MRY'06-2018

It is of red fabric with flaring rim, elongated cylindrical neck, and small handles that connect from the neck to the shoulder. The body features imperceptible flutes at intervals. The origin is the Lebanon-Tripoli region. Its area of distribution is the Eastern Mediterranean, the Aegean and the Black Sea.

Alpözen, T. Oğuz-Özdaş, A. Harun, Belkaya Bahadır, 1995, p. 69.

RA



Y7

Coin

Constantine I
4th century
Bronze
1.7 x 0.1 cm
MRY'06-527
1783/1

The obverse features the inscription CONTANTINUS, AVG and the Emperor's bust in a right profile. The reverse side is ornamented with a depiction of a city gate. The inscription on the reverse is indistinct. It is complete.

RA



Y8

Ornamented base sherd

4th-5th century
Terracotta
14.2 x 9 x 0.5 cm,
d. diameter: 11.7 cm
MRY'06-2184
07.58 ÇÇ

It is of camel fabric with slip. The tondo features two interlaced rings created in impressed-decoration technique at the centre, surrounded by a sequential stamp of sandal motifs, circumscribed by parallel, circular motifs. A large portion is broken and missing. It is of North African origin.

Parallel example: Hayes, J. M., 1972, p. 302, fig. 59-c.

RA





Y9

Pottery lamp

4th-5th century

Terracotta

h: 4.3 cm,

diameter of discus: 4.1 cm

MRY'06-1362

07.16 PT

It is of gray fabric with a compressed body, a knob handle and a flat base. The discus is bordered by two interlaced circles. Between the two discus holes, there is a dressed left-facing profiled female figure, perhaps a maenad, playing the *kithara*. The area above the shoulder features plant ornamentation. The handle on the shoulder is knob-shaped. The base ring carries a foot-shaped stamp.

Robinson, S, 1960, pl. 16 et. al.

RA



Y10

Ornamented base sherd

5th- 6th century

Terracotta

10.9 x 1.9 x 0.5 cm

MRY'06-2079

07.57 ÇÇ

It has a red fabric and camel-coloured slip. The centre of the tondo features running animal figures with their heads turned backwards applied in impressed-decoration technique. It is of Aegean origin.

Hayes, J. M. 1972, p. 355, fig. 74-m.

RA



Y11

Pottery lamp

5th-6th century

Terracotta

h: 3.6 cm, u: 9.7 cm,
diameter of discus: 3 cm

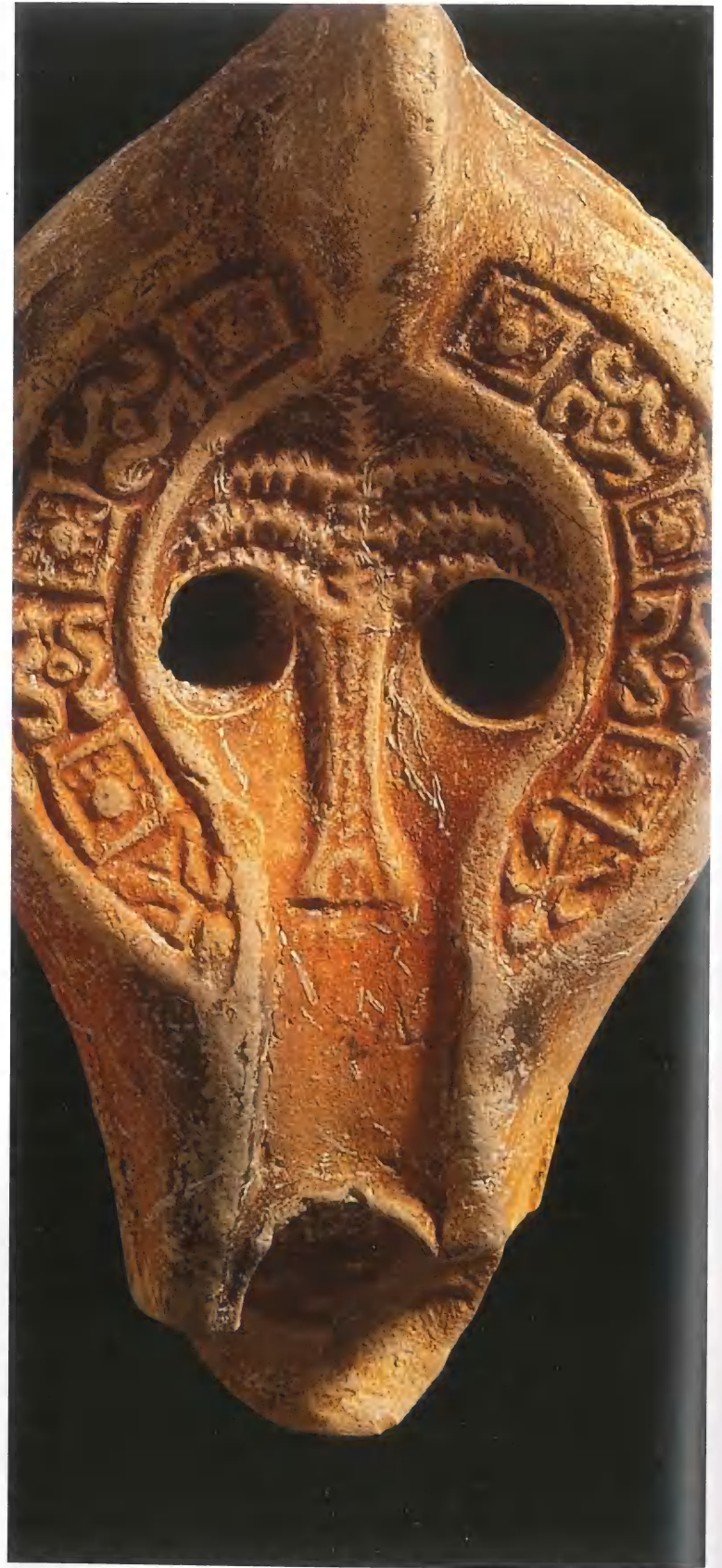
MRY'05-897

06.204 PT

It is of camel fabric with compressed body, flat base and a knob handle. At the centre of the double-hole discus, there is a stylized tree motif. The shoulder of the pottery lamp features rosettes and stylized geometric motifs in consecutive order. A portion of the nozzle is broken and missing. It is of North African origin.

Hayes, J. W. 1972, pl. XXI.

RA



Y12

Head of a figurine

5th-7th century

Ivory

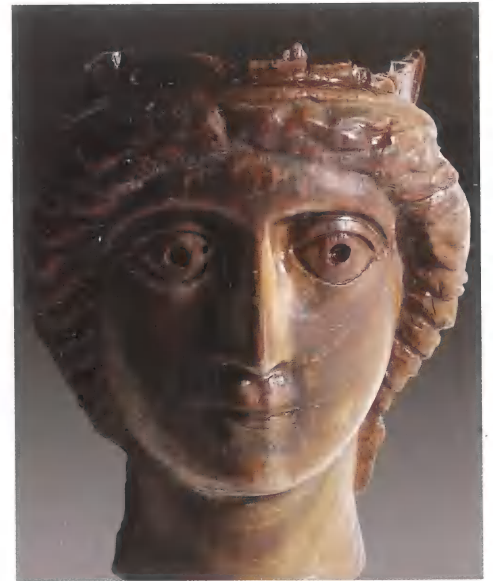
h: 11 cm, w: 7 cm

Yenikapı Metro Excavation

YKM 06.2503

It has a round face, round eyes, and a small mouth. The forehead is narrow; curls extend from the forehead to the neck. The crown is broken and missing.

RA



Y13

Plaque

5th-7th century

Ivory

Large p. h: 12.2 cm,

Small p. h: 4.9 cm

YKM 06.2504

There is a meander motif on the neck of the plaque which represents a woman. The breasts are distinct; underneath, there is a belt with ribbon. A large portion of the plaque is broken and missing.

RA



Y14

Scale components

5th-7th century

Bronze

Upper section l: 30 cm, lower section l: 11.5 cm

MRY'05-1323

06.218, 219, 222 M

The beam of the weighing scale bulges at the centre and narrows towards the two ends. The free rings at the two ends were possibly connected to shallow, circular scale pans with chains. At the exact centre, there is a rectangular knob, comprised of an interconnected fixed interior and moveable exterior. The beam features measurement lines. The weighing scale is broken and has missing parts.

RA



Y15

Pottery lamp

6th-7th century

Terracotta

h: 4.9 cm,

diameter of discus: 5.1 cm,

diameter of discus hole:

1.5 cm

MRY'05-774

06.154 PT

The pottery lamp of camel fabric has a bi-conic body with a knob-handle and flat base. The discus features two fluted, double-row reliefs. The knob is shaped like a stylized ox head. The nozzle is broken, missing and has burn marks.

Bass, G., 1983, pp. 194-199; Hayes, J. W. 1992, pp. 18-25.

RA



Y16

Spetia-style amphora

6th-7th century

Terracotta

h: ~38.5 cm,

diameter of rim: 5.3 cm

MRY'06-3357

07.85 ÇÇ

The amphora is of reddish, camel fabric with thick rim, short neck, and a slender, cylindrical body. There are two small, vertical handles on the neck. The base is broken and missing. The provenance is Benghazi, Spain, or North Africa. The area of distribution includes the Mediterranean and environs as well as the Black Sea. It was possibly used for transporting wine.

Bass, G., 1983, p. 186, fig. 8-220, P 66; Scorpan, C., 1976, pl. XIV-4.

RA



Y17

Censer

6th-7th century

Bronze

h: 8.4 cm, diameter: 6.6 cm

MRY'06-4969

The censer has a globular body and a circular base with triple feet. On the sides of the rim, there are four holes for the chain to pass through. The intact chains attached to two of these holes are connected to the thin, hook-shaped suspension. The censer lid has circular decorations at intervals and its knob is shaped like a flower. Some chains are broken and missing.

RA



Y18

Steelyard weight

6th-7th century

Bronze and lead

h: 23.5 cm

MRY'07-4900

The weight is a depiction of the bust of Athena. It features an oval face, large, doe eyes, a small, parted mouth and cheeks. The Corinthian helmet has fish depictions on either side. The front of the body is ornate with the head of Medusa, whereas the back is armored in fish scales.

Bass, G., 1983, pp. 216-217; Meriçboyu Y., Atasoy P., 1983, pp. 9-12, catalogue no.3.

RA



Y19

Amphora

6th-7th century

Terracotta

h: 47 cm,

diameter of body: 26.5 cm

MRY'06-4406

The amphora is of gray fabric with a flaring, thick ring rim, short neck, cylindrical body, concave base and vertical handles that connect from the neck to the shoulders. It is complete.

Bass, G., 1983, P 77.

RA



Y20

Amphora lid with stamp

6th–7th century

Terracotta

h: 5 cm, diameter of rim:

10.1 cm, diameter of seal:

2.2 cm

MRY'06-2020

07.55 ÇÇ

The lid of camel fabric with slip, stamp, and cork. The cork is marked with sand and lime mortar stamps with five upward-facing flutes. The stamp features a cross flanked by the letters I and C, the abbreviation for *Istus Cristus*.

Bass, G., 1983, P 77; for corking method see: Alpözen, T. Oğuz-Özdaş, A. Harun, Belkaya Bahadır, 1995, pp. 18–22.

RA



Y21

Game piece (chess)

6th–7th century (?)

Walrus tusk (?)

h: 2.2 cm, diameter: 2.6 cm

MRY'05-1026

06.203 M

The game piece has a cylindrical body with a pointed top.

Bass, G., p. 335, fig. 19–5 (Serçe Limani).

RA



Y22

Pipette

7th century

Terracotta

h: 29.3 cm,

diameter of rim: 2.7 cm

MRY'06-1525

07.44 ÇÇ

The pipette is of red fabric. The conical base flares upwards and creates a wide arch at the body. Extending from the shoulder, the handle connects with the lower part of the rim.

Bass, G., Yassi Ada, v. 1, P 72.

RA



Y23

Amphora

7th-8th century

Terracotta

l: 44.6 cm, diameter of rim:

7.7 cm, width across

handles: 15 cm

MRY'06-2495

07.70 ÇÇ

The amphora of gray fabric has a flat rim, short, inflated neck, double handles, and a flaring cylindrical body that extends towards the base. Originating from the neck, the handles end at the shoulder.

Arthur, P., 198, p. 84, fig. 4.

RA



Y24

Bowl (?) with human face

7th-8th century

Terracotta

diameter: 11.2 cm, w: 7 cm

MRY'07-5473

The pot of grayish, camel fabric and slip. On one side of the globular body there is a relief of a round, Asian human face with slanting eyes, small nose, and thick, parted lips. The cap is carved in bas-relief.

RA



Y25

Plate

9th-11th century

Terracotta

h: 4.4 cm,

diameter of rim: 16.8 cm

MRY'06-511

06.223 ÇÇ

The plate is of white fabric and is coated with yellow glaze and features impressed-decoration technique. It has an everted rim, globular body and a tall, footed base. There is a gazelle figure and stylized floral motifs at the centre of the plate's tondo. The rim is broken and missing.

RA



Y26

Brick with graffiti

10th-11th century

Terracotta

h: 13 cm, w: 10.8 cm

MRY'06-3036

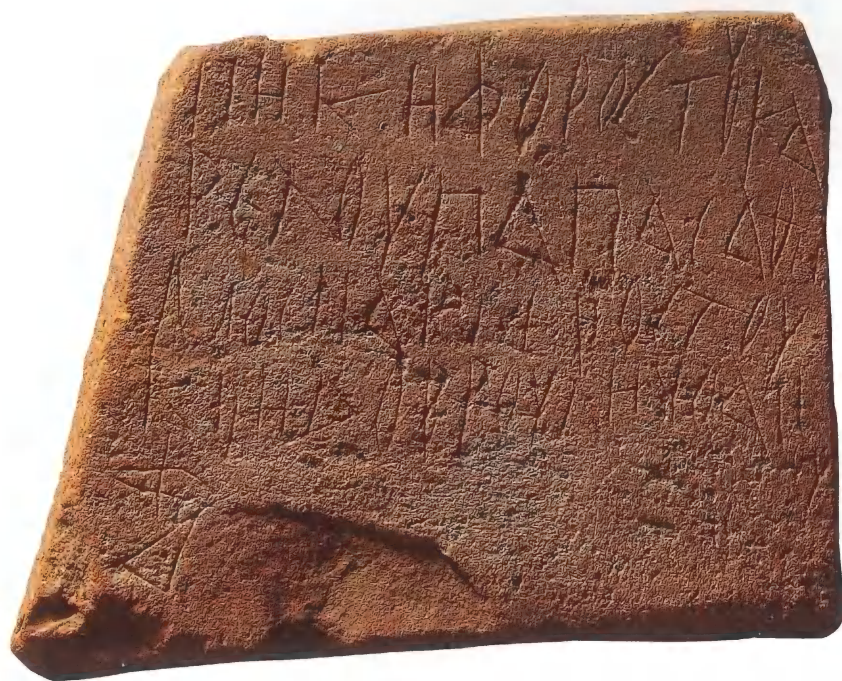
07.17 PT

The brick has a red fabric and white slip. On one side, there is a four-line inscription in Greek:

ΝΗΚΗΦΟΡΟΣΤΟΥΚΑ
ΡΕΝΟΥΠΑΠΑΣΑΘΜ
ΛΛΟΣΝΑΚΛΙΡΟΣΤΟΥ
ΚΟΗΔΟΡΡΟΥΛΗΥΟΑΝΟΥ

"Karenos' son Nikephoros [and]
Koedorros' son, Levoanos'
grandson, ship owner Papas
from Atil [?]"

RA



Y27

Amphora

Byzantine, 11th century

Terracotta

h: 39.4 cm, w: 33.9 cm,

width across handles:

27 cm,

diameter of rim: 8.5 cm

MRY'05-560

07.40 ÇÇ

The amphora of red fabric has a flaring rim, bulging body that narrows towards the base. Extending from below the rim, the handles connect to the shoulders. There are flutes across the whole body. Both handles of the amphora are stamped.

RA





Y28

Ware sherd

Chalcolithic

Terracotta

h: 25.5 cm, diameter of

body: 21.5 cm

MRY'06-4508

07.98 ÇÇ

The ware sherd is of gray fabric with stone and silica, gray slip, a flat rim, elongated cylindrical neck, and globular body. There is a vertical, semi-circular handle on the body. A large portion of the ware is broken and missing.

Özdoğan 1999, p. 16 drawings: 8-9

GBÇ



Y29

Large earthenware vessel

Iron Age (?)

Terracotta

h: 20.6 cm, diameter of

rim: 28 cm

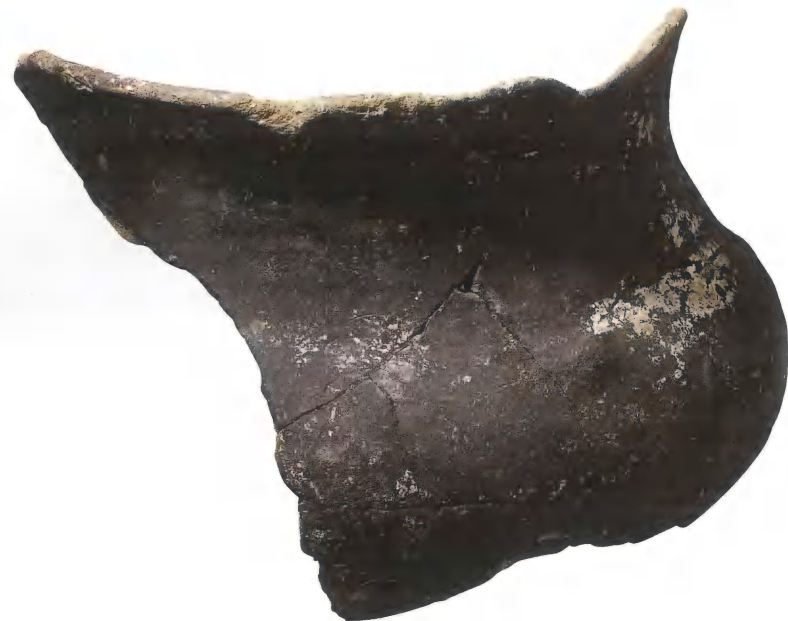
MRY'06-4513

07.102 ÇÇ

Large vessel is of polished gray fabric mixed with stone. It features a simple rim, longish concave neck, and short, bulging body. There is a lobe between the body and neck. A large portion of the vessel is broken and missing. Its surface is burnt.

Parallel example: Blegen 1958, Sec. 1, p. 165, sec. 2 pl. 259/32.92.

GBÇ



Y30

Ceramic sherd

Iron Age
Terracotta
h: 12.9 cm,
Diameter of body: 13.8 cm
MRY'06-4514
07.103 ÇÇ

The ceramic is of dark gray fabric with added fine stones and slip. The simple rim is slightly flared. The ware has a longish neck, shoulders at sharp angles and a shallow, globular body. It features a horizontal relief line on the neck and an indiscernible ribbed ornamentation on the shoulder. A triangular knob extends from the shoulder upwards. A large portion is broken and missing. The surface is considerably abraded.

Parallel example: Blegen 1958, sec. 1, p. 195, sec. 2 pl. 281/12.

GBÇ



Y31

Skyphos

7th-6th century BC (?)
Terracotta
h: 9.7 cm, diameter of
base: 6.3 cm
MRY'06-4515
07.104 ÇÇ

The *skyphos* has a simple rim, a globular body that narrows towards the base, a ring base and a horizontal handle. The exterior features painted decorations in wide bands. A large portion of the *skyphos* is broken and missing.

Özkan, Turhan, 1999, cat. no. 130.

GBÇ



Y32

Oinochoe with trefoil rim

Early 6th century BC

Terracotta

h: 22.5 cm,

diameter of rim: 9.1 cm

YKM 06. 2735

07.21 ÇÇ

The *oinochoe* has a trefoil rim, short neck, globular body, and a single vertical handle. Horizontal bands decorate the rim and body, while rosette-like dotted motifs decorate the shoulders. A large portion of the vessel is broken and missing.

Özkan 1999, fig. 139, fig. 97.

GBÇ



Y33

Plate with black glaze

5th-4th century BC

Terracotta

Diameter: 16.4 cm

YKM 06.2534

07.19 ÇÇ

The plate is of pinkish fabric with a wide, shallow body, and a low foot base. Inside the roulette decoration at the centre of the plate, there are 5 palmette motifs connected to one another with horizontal lines. The foot base features graffiti motifs. The plate is intact.

For rosette decoration see: Rotroff I. Susan, 1997, sec. 1, p. 156-157, sec. 2, pl. 144, fig. 866; Pasinli, A., 1995, p. 138, pl. 52, c. 118.

GBÇ



Y34

Oinochoe fragment

4th-6th century

Terracotta

h: 14.6 cm, diameter of
rim: 8.1 cm

MRY'06-2032

07.56 ÇÇ

The *oinochoe* of camel fabric and red slip with a trefoil rim, bulging body, and a single handle. Starting at the rim, the horizontal flutes continue on the neck. The body also features roulette decoration at intervals. The letters XPY are applied to the shoulder in sgraffito. A large portion of the body is broken and missing.

GBÇ



Y35

Cup

4th-5th century

Glass

h: 8.1 cm, diameter of rim:

6.4 cm, diameter of base:

4.1 cm

MRY'05-822

07.121 C

The cup is made of light green, transparent glass. It has a simple rim, bulging body, slender stem, and a flat, circular foot base. The body has been repaired.

GBÇ



Y36

Pottery lamp

5th-6th century

Terracotta

h: 5.8 cm, l: 17 cm

MRY'05-1354

07.354 PT

The pottery lamp is of gray fabric and has a high nozzle. The discus features the frontal façade of a temple. It has no handle and is intact.

GBÇ



Y37

Beaker

4th-5th century

Glass

h: 10 cm, diameter of rim:

6.7 cm, diameter of base:

4.3 cm

MRY'06-1559

The beaker is made of olive-green, transparent glass. The conic body narrows towards the slightly convex base. The body features a single row of cobalt-blue relief decoration made of glass. It is broken and has been repaired. There is a small portion missing under the body.

Fleming, Stuart F. 1997, p. 32, fig. 1 A,B; *Trois Millenaires D'art Verrier*, 1958, p. 86-87, catalogue no. 181.

GBÇ



Y38

Lantern

5th-7th century

Terracotta

h: 18 cm, diameter of base:

12.3 cm

MRY'06-2178

07.18 PT

The lantern of camel fabric with small, added stones, a dome-like top, cylindrical body that narrows towards the base, and a flat bottom. The body features three rows of irregularly placed holes. The shoulder bears traces of a handle. The handle is broken and missing, and the body has burn marks.

GBÇ



Y39

Sandal sole

5th-7th century

Wood

h: 1.9 cm, l: 25.5 cm

MRY'06-4381

The sole has a pointed toe, angular, elongated body, and a round heel. The sole part is stepped. The upper surface includes bird and floral motifs in sgraffito and is framed by the inscription, "Υγιένουδα χρῶ κυρά κάλει γλαρι ὑπάρχουδα ἔπένιδε" "Use it in good health, lady. Be beautiful and happy and wear [this]". It is intact.

For the inscription, see: Nachtergaele Georges-Russo Simona, 2005, p. 308, fig. 1.

GBÇ



Y40

Mirror

5th-7th century

Bronze

6 x 4.1 x 0.1 cm

MRÝ'05-1329

07.224 M

The round mirror frame features a loop on the upper section and triangular decorations with drop-ends on the sides. The handle is short and is decorated with lines. The mirror is intact.

GBÇ



Y41

Sandal sole

5th-7th century

Leather

l: 25.7 cm, w: 8.9 cm

MRÝ'06-2276

The heel is rounded, and the base, where the front part of the foot is set, is wide and almost quadrilateral. The entire surface is covered with geometric designs and a dotted border that frames the designs. Near the toe area, there are two strap holes on top of one another; a portion of the strap can be seen on the heel. It is torn and worn-out in various places.

GBÇ



Y42

Die

5th-7th century
Ivory
h: 1.3 x w: 1.4 cm
MRY'07-5621

The die has a quadrilateral form with rounded corners. The numbers are inscribed in birds-eye design. It is intact.

GBÇ



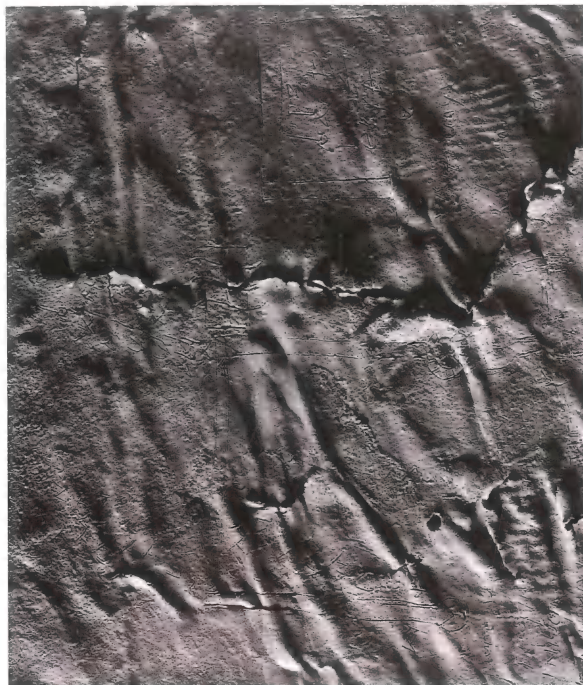
Y43

Inscribed tablet

5th-7th century
Lead
l: 33.5 cm, w: 12 cm
MRY'06-3333a
07.94 ÇÇ

The tablet has a quadrilateral form. Its surface is covered with unrecognizable inscriptions, lines, and figures. It is broken and missing in parts.

GBÇ



Y44

Comb

9th-10th century

Wood

l: 14.9 cm, w: 9.8 cm

MRY'06-2461

One side of the comb is wide-toothed, the other is narrow-toothed. The body of the comb is semi-circular; at its centre, and there is a large circular depression, flanked by four smaller ones on each side. Coloured glass is inlaid into all the depressions. The comb is intact.

Davidson, Glays R., 1952, p. 182, catalogue no.1304.

GBÇ



Y45

Heating pot

9th-11th century

Terracotta

h: 13.6 cm,

diameter of rim: 18 cm,

diameter of base: 14.1 cm

MRY'06-4000

The heating pot of white fabric and a speckled green slip. It has a gradual rim, circular body that narrows towards the base, and a ring base. It is comprised of a hollow upper section and another, slightly hollow, interior section. The handles emerge from immediately below the rim and connect to the middle of the body. There is a gate-like aperture on the body. The exterior features a double-storey architectural depiction. The upper story is arched, and the lower story is quadrilateral. There are fractures and missing parts on the body and one of the handles.

Hayes, J. W., *Excavations at Saraçhane*, v. 2, pl. 18-25; Vroom, 2005, p. 72, f. 3.3, date: 8th-11th century

GBÇ



Y46

Chess piece

11th century

Ivory

h: 3.7 cm, diameter of

base: 2.5 cm

YKM 06.005

07.10 M

With a circular base and a semi-circular body, the chess piece widens and extends upwards in two steps. It is broken and has been repaired.

Cassavoy, Kenneth, 2004, p. 335, fig. 19-5.

GBÇ



Y47

Game piece

10th-12th century

Bone

Diameter: 2.5 cm

MRY'06-2346

07.7 M

The game piece has a circular form and a convex upper section. It features a cross motif with indented circles at each end. It is intact.

Davidson, Gladys R., 1952, pl. 99

GBÇ



Y48

Key

10th-12th century

Bronze

Ring: 4.2 x 1.8 cm, Key: 1.2

x 2.6 cm

MRY'05-464

06.164 M

The ring at the top of the key is circular. The upper section has a drop-shaped projection. The key section is quadrilateral and has two holes. The key is intact.

Davidson, Gladys R., 1952, pl. 70-71.

GBÇ



Y49

**Brick with Game Board
Inscription**

9th-13th century

Terracotta

l: 17.5 cm, w: 11.1 cm

YKM 05.036

07.19 PT

The brick is of red fabric and has a quadrilateral form. It features three quadrangles inside one another and four perpendicular incised lines that connect them at the centre. A portion of the short side is broken and missing.

Rautman 2006, p. 57.

GBÇ



Y50

Bowl sherd

15th century

Terracotta

h: 12.6 cm, diameter of

base: 9 cm

MRY'05-795

2006.82 ÇKM

Known as Milet-style, this Iznik bowl is of red fabric and has a globular body that narrows towards the base, and a ring base. It is ornamented with cobalt-blue plant motifs painted on a white slip. A large portion of the bowl is broken and missing.

For technique: Hayes, J. W., 1992, v. 2, pl. 28.

GBÇ



Y51

Vessel with single handle

16th century

Terracotta

h: 8.2 cm,

diameter of body: 13.5 cm,

diameter of base: 7.9 cm

MRY'05-1000

2006.83 ÇKM

The vessel of white fabric, a simple circular rim, an elongated neck that narrows towards the bulging body, a ring base, and a single handle that extends from the rim to the shoulder. The vessel is broken and has missing parts. It has been reconstructed with gypsum plaster.

For technique: Pasinli, A., Saliha Balaman, 1992; Atasoy, Nurhan-Raby, Julian, 1989, catalogue no. 11; Lane, Arthur, 1971, fig. 44.

GBÇ



Y52

Pottery lamp

17th-19th century

Terracotta

h: 8.9 cm, diameter of

base: 8 cm

MRY'05-474

2006.81 ÇKM

The pottery lamp of pinkish fabric, green glaze, and a trefoil rim. Expanding towards the base, the circular pedestal connects to the bowl. The base is flat. The lamp is intact.

Hayes, J. W., 1992, p. 385, fig. 143-5.

GBÇ



Y53

Pipe-shaped tube

17th-19th century

Glass

l: 12.7 h: 6.7 cm

MRY'05-302

06.108 C

The rim is funnel-shaped and connects to the circular, hollow tube at a right angle. There are broken and missing pieces on the rim of the funnel and at the end of the tube.

GBÇ



Y54

Medicine bottle lid

18th-19th century

Bronze

Diameter: 2.9 cm

MRY'05-290

06.152

The lid has a circular form. It pictures a scene of an enema-procedure. It is intact.

GBÇ



Y55

Female sculpture

2nd century

Marble

l: 75 cm, d: 31 x 30 x 24 cm

MRY'05-416

07.16

The left foot of this standing female statue acts as its support, while the right foot remains free. She is dressed in a *chiton* and *himation*. She holds her clothing with her left hand and holds a bird over her chest with her right hand. There is a two-line Greek inscription on the pedestal. The head is broken and missing.

AT



Y56

**Statuette of Apollo or
Hermes**

2nd century

Ivory

l: ~ 15 cm

MRY'05-690

06.181

The body of this standing, nude male has an S-curve pose. Quite possibly the left foot serves as a support, while the right foot remains free. The left arm is bent at the elbow and carries a cape. There is a tuft of hair on each shoulder. The head, the right arm, the left leg, and a large portion of the right leg are broken and missing.

Mendel 1914, p. 582, catalogue no. 1371 (2455), p. 112 catalogue no. 375 (146).

AT



Y57

Pottery lamp

5th–6th century

Terracotta

h: 4.1 cm, l: 9.3 cm,

MRY'05-947

06.223

This depressed, conic pottery lamp has a globular body, double disc holes, and a knob handle. The discus features a christogram. Located on the horizontal arms of the christogram are χ and ω , the first and last letters of the alphabet, which signify that Jesus Christ is the beginning and the end. Underneath the vertical arm of the cross, there is a depiction of a sheep, alluding to Jesus, The Good Shepherd.

Robinson, P. Excavations at Corinth, 1960, *The Athenian Agora*, 2441.

AT



Y58

Icon sherd

5th–7th century

Ivory

7.3 x 4.3 x 0.4

MRY' 05-761

06.187 m

On the upper corner, there is a relief depiction of Nike in profile with laurels in one hand and an unidentified object in the other. Underneath the Nike depiction, there are grape leaves inside the two horizontal bands. There is a broken and missing piece from the upper corner on the edge.

AT



Y59

Stamped sea shell

5th-7th century (?)
Mother of pearl
stamp: 1.5 x 1.3 cm,
mother of pearl: 13 x 8 cm
MRY'05-1320
06.216 m

This lead seal applied on mother-of-pearl includes the monogram: Εβρανού (Evranoú: Euranos'). The letters "Α" and "Ω" are incised on the right edge of the mother-of-pearl. It is intact.

Zaios, Veglery, *Byzantine Seals*.

AT



Y60

Ampule

7th century
Terracotta
h: ~ 7.1 cm, diameter:
6.9 cm
MRY'06-2197
07.59

The ampule is of gray fabric with a circular body, and double handles. The front and back feature the figure of the ruler of animals (?), standing inside a dotted border with crosses over each shoulder and carrying camels in both hands.

Stanley, T. *Place and Mosque: Islamic art from the Middle East*, Hong Kong 2004, pp. 22-23; Wamser L., *Die Welt von Byzanz-Europas Östliches Erbe*, 2004, p. 203, fig. 287

AT



Y61

Ceramic sherd with relief

9th-11th century

Terracotta

h: 9.6 cm, w: 9.3 cm

MRY'06-3971

07.93

This ceramic sherd is of white fabric and is coated with green glaze. The nearly quadrilateral-shaped vessel pictures a temple with a circular pediment, flanked by two pillars at the front. At the centre of the temple, there is a full-frontal bust, the upper portion of which is enclosed in a floral niche.

AT



Y62

Base sherd

11th-12th century

Terracotta

h: 2.6 cm, diameter of

base: 5.8 cm

MRY'05-162

06.166

This glazed base sherd with a saint depiction of camel fabric. The tondo of the base is ornate with a depiction of a saint drawn in black paint. The interior and the exterior of the vessel is coated with light brown glaze.

For technique: Hayes, J. W., *Excavations at Saraghane*, v. 2, pl. 8-9; Davidson, G., *Corinth*, v. XI, p. 64.

AT



Y63

Comb

Byzantine

Wood

l.: 12.7 cm; w.: 8.6 cm.

YKM 06.1857

One end of the comb is wide-toothed, while the other end is narrow-toothed. Both ends are connected at the centre to a body that is flat on one end and oval at the other. The body carries the inscription, "Mighty God, Please Help". Some of the teeth are broken and missing.

Davidson, catalogue: 1304, 1952, p. 182.

AT



Y64

Figurine of Jesus Christ

18th-19th century

Bronze

l: 6.6 cm

MRY' 05- 252

06.148 m

This figurine depicts the crucifixion of Jesus Christ.

AT



Y65

Foot base with tulip depiction

14th-15th century
Terracotta
h: 6.8 cm, diameter of
base: 9 cm
MRY'05-336

The base is of red fabric with yellow glaze, and a high foot. The tondo of the plate is ornate with a stylized tulip motif inside two concentric circles incised in brown glaze.

Aşkıl Akarca, 1979, p. 292.

AT



Y66

Pottery sherd with inscription

16th-17th century
Terracotta
8.5 x 4.7 x 1.8 cm
MRY'05-177

The sherd of camel fabric with a light green glaze. The entire surface is circumscribed with an incised Ottoman inscription in dark green glaze.

Saraçhane, pl. 42-d-h.

AT



Y67

Pottery lamp mould

4th-6th century

Terracotta

h: 3 cm, w: 7.9 cm,

l: 9.9 cm

MRY'06-4504

07.19 PT

This terracotta mould of light camel fabric and slip features a wide, elongated body. The mould, which corresponds to the base of a pottery lamp, is ornamented with a foot motif surrounded by a circle, as well as plant motifs.

Robinson, P., *Excavations at Corinth*, 1960, p. 349; Hayes, J. W., *Excavations at Saraçhane*, v. 2, pl. 18-25.

SÇ



Y68

Anchor

5th-7th century

Marble

h: ~ 53.3 cm,

surface w: 26.5 x 48.5 x
45 cm

MRY'06-3089

06.18

The marble anchor has a triangular shape and a thin, elongated body. There are three holes on the anchor: two on the lower section and one on the upper section. The upper hole is where the rope is pulled through, while the two lower holes are where the wooden claws were connected. The front surface of the anchor is flattened. An incised motif is visible on the surface.

sq



Y69

Weight

5th-7th century

Lead

6.5 x 0.6 cm

MRY'05-712

07.185 m

This lead net-weight is roughly a rectangle. There are apertures on both ends. Both sides of the weight are ornamented with geometric, line decorations.

Bass, G., *Yassi Ada*, v. 1, p. 304;
Bass, G., *Serçe Limani*, v. 1, p. 400,
401, 402, fig. 22-4 (11th century).

SÇ



Y70

Netting needle

5th-7th century

Bronze

l: 19.2 cm

MRY'05-922

07.195 PT

The bronze netting needle is slender and long. The ends are finished in leaf shapes.

Bass, G., *Yassi Ada*, v. 1, p. 261 (for
6th-7th century); Bass, G., *Serçe
Limani*, v. 1, p. 421, fig. 22-13 (for
11th century).

SÇ



Y71

Lid with funnel

5th-7th century

Terracotta

h: 2.8 cm, l: 5.8 cm

MRY'06-2343

07.65 PT

The circular lid portion of this terracotta lid with funnel has a circular knob. The funnel is attached to the centre of the lid portion.

sq



Y72

Pot

10th-11th century

Terracotta

h: 10.2 cm, diameter of

rim: 2.9 cm, diameter of

base: 4.5 cm.

MRY'06-2300

07.62 PT

This is a terracotta container of gray fabric with slip paint. It has a thick, flat, small rim, a short, slender neck, a considerably bulging body, and a flat base. It may have been used to hold mercury or similar chemical substances.

sq



Y73

**Stopper with
ornamentation**

10th-11th century

Terracotta

l: 2.4 cm, diameter: 5.1 cm

MRY'06-2305

07.63

This terracotta stopper has a red fabric and slip. The top surface of the circular body of the stopper features incised plant motifs.

SÇ



Y74

Bow drill

Byzantine

Wood

l: 21.6 cm, w: 6.7 cm

YKM 05.171

The bow drill is made of boxwood. The entirety of this tool serves the same function as the drill-chuck portion of present-day drills. At one end, there is a piercing metal bit, while a pivoted handle at the other end allows the body to rotate freely.

ŞÇ



Y75

Spool

Byzantine

Wood

Diameter: 6.4 cm,

Diameter of hole: 2.4 cm

YKM 06.1820

This is possibly a spool. The centre of the circular body has a wide hole. A portion of the body is broken and missing.

ŞÇ



Y76

Spool

Byzantine

Wood

w: 15 cm, t: 2.8 cm

YKM 06.1843

This slender, cylindrical piece has two ends towards which it narrows. The centre of the spool has been narrowed, possibly to reel a rope. There is a dent on one end, which is broken and missing a piece.

ŞÇ



Y77

Needle

Byzantine
Bronze
l: 10.5 cm
YKM 06.1908
07.13 m



Y78

Weaving comb

Byzantine
Wood
l: 21 cm, w: 14.5 cm
YKM 06.1838

This is possibly a tool, similar to a comb, used in weaving. The flat handle is connected to an unornamented, quadrilateral body. The lower part of the body ends with thick teeth, some of which are broken and missing.

Maguire, E. D., *Art and Holy Power in the Early Christian House*, Chicago 1989, p. 155, fig. 79.

SC



Coins

SK

Coins and Seals

Turan Gökyıldırım*
Sedat Öztöpaş**
Betül Özden Tan***

* Istanbul Archaeological
Museums, Non-Islamic Coin
Cabinet Specialist

** Istanbul Archaeological
Museums, Non-Islamic Coin
Cabinet Specialist

*** Istanbul Archaeological
Museums, Islamic Coin Cabinet
Specialist

Coins from Marmaray Üsküdar excavation (catalogue no. SK1-SK7)

In the excavation works conducted at Üsküdar Pier Square as part of the Marmaray Project, ruins of a bazaar from the Ottoman Period have been unearthed at the upper level. Furthermore, in the area where these ruins are set upon the dirt fill created by the dirt infill of the former inlet, test pittings have revealed numerous small finds from the Late Roman and Byzantine periods. Apart from the limited number of well-preserved coins (catalogue no. SK1), the finds also include a lead seal from the period of Constantine V – Leo IV (741-780) (catalogue no. SK2). It appears that this seal was the property of the state storehouse of the Thynia administrative province, where the inspection of silks and other valuable fabrics was conducted. The Thynia province encompassed a large area that included the Asian shores of the Istanbul Strait and extended from Izmit Bay to the point where the Sakarya River poured into the Black Sea. Therefore, the Thynian seal is also of particular importance with respect to the history of Üsküdar¹.

The unearthed building ruins from the Ottoman Period show parallels with the predominantly 18th-19th-century coins obtained at these levels (catalogue no. SK3-SK7).

Coins and seals from the Former Sultanahmet Prison excavation (catalogue. no. SK8-SK28)

The ongoing excavations on the nearly 17-thousand-square-metre site in the area of the Great Palace were initiated by Istanbul Archaeological Museums in 1997. After the ceramics finds excavated in this area, coins constitute the second largest group among the finds. Not all the recovered coins have been displayed in the exhibition. A selection was made among those in better condition. The coins catalogued here are examples chosen from among the coins displayed in the exhibition. In the overall evaluation of the excavation, all coins were taken into consideration. With the exception of coins that were exposed to excessive oxidation and corrosion, a general evaluation of the coin-finds reveals that they date predominantly of the Byzantine and Ottoman (19th century in particular) periods. Apart from these, Roman and Late Roman coins discovered with these two larger groups are rare.

A significant portion of the coins were discovered within the dirt infill which contained a variety of finds

¹ G. Zacos-A. Vegler, *Byzantine Lead Seals I*, Basel 1972, pp. 331, 253.

from different periods and occupied a large part of the area because structures, such as the Darül Fünun-Palace of Justice building and the Former Prison House, were built at a later date.

In terms of their location, other coins show parallels with unearthed Byzantine-Period structural remains, which appear to have had various phases of construction.

One group of finds (examples, catalogue no. SK8-SK12) comprises 23 coins, all of which belong to the reigns of Constantine I (307-337 AD) and Licinius I (308-324 AD). They were discovered during a test pitting underneath Byzantine structural remains and unearthed in the dirt fill which held a large number of Greek-Roman ceramic samples on the bedrock. This fact suggests that the infill was connected to construction activities (infill of an area inclined towards the sea) carried out in the region of the Great Palace during the reign of Constantine I. In this group, the letters "TT" found on the reverse side of the coins of Licinius I and Constantine I, indicated here as catalogue nos. SK8 I. and SK9 respectively, show that these two coins were struck at the Ticinum (present-day Pavia in Italy) mint. These letters are also found on similar coins of the same emperors struck in the same mint².

Also included in this group of finds and struck in commemoration of Constantinople's becoming the new capital, the bronze coins (catalogue no. SK10, SK11) had a limited issue, and few examples have survived to date³.

Unstruck Byzantine coin blanks

(catalogue no. SK15, 16)

Discovered at the A.31/B.28 grid squares, these blanks were prepared but never struck. The area where the blanks were discovered has an ash stratum. Furthermore, a large number of 10th-11th century bronze Byzantine struck coins have been encountered in the same area. Both the blanks and the ash residue indicate that this area was probably a coin-minting workshop of the 10th-11th centuries.

Byzantine lead seal (catalogue no. SK 26)

Preserved in surprisingly good condition, this lead seal is typical of the 11th century. The depiction of Saint Ananias on the obverse is rarely encountered on seals. There is no definite information about the exact location of the Saint Ananias Monastery, mentioned on the reverse side of the seal. However, the church located 5 kilometres to the east of Mardin, commissioned by Byzantine Emperor

² P. M. Bruun, *Roman Imperial Coinage*, v. VII, London 1966, p. 358.

Anastasius (491-518) and currently known as Deyrül Zafaran (Saffron) Monastery, was restored by Mor Hananyo (Saint Ananias) in 793 and was initially referred to as such. Due to the saffron grown around the monastery in the 15th century, the Mor Hananyo (Saint Ananias) Monastery came to be known as Zafaran. It appears that Basil, the owner of the seal, was a low-ranking priest (deacon) and that he was appointed by the emperor to administer (*kharistikartes*) the Monastery.

Ottoman seal (catalogue no. SK 27)

"Mustafa Efendi, Old Palace halberdier (*teberdar*) and servant to the virtuous Esma Sultan of great renown, 1207." Esma Sultan (1778-1848), mentioned on the seal is the daughter of Ottoman Sultan Abdülhamid I. She was married at the age of 14 and was a widow by the time she was 25. She never remarried, but she led a prosperous and luxurious life. Known for her love affairs and her penchant for lavish clothes and entertainment, Esma Sultan supported the rebellion that broke out in Istanbul during this period. In fact, janissaries, who had plotted to dethrone Mahmud II, contemplated enthroning Esma Sultan in his place, but they eventually changed their minds.

Teberdar, or halberdier, is the name given to the groups of janissaries who served as guardsmen in attendance on the Sultan at ceremonies. Each carried a halberd, an axe-like weapon. Each sultan and crown prince at the Court had a *teberdar*, who ran errands for sultans and princes.

The Old Palace mentioned on the seal is the former palace in Beyazit, which came to be known as the "Old Palace" after the completion of the Topkapı Palace. The women of the court lived here.

According to the Hijri date 1207, this seal was inscribed in the name of *teberdar* Mustafa Efendi, appointed to the Old Palace to serve Esma Sultana, who was 15 (H. 1207/ G 1793) at the time.

Ottoman seal (catalogue no. SK28)

The oviform seal carries the name "İzmidliyan Brothers" inscribed in Ottoman Turkish at the center, in Armenian at the top, and in Greek at the bottom. The trilingual inscription on the seal suggests that the brothers may have been merchants. Except for the names, which reveal the date and the identity of the owners, there is no other information on the seal.

However, in the tradesmen records of the Arnavutköy Quarter (Megarevma), the Follow-up Register for the



Tax Collectors of the Local Government from 1930-1931, the names of Artin and Kirkor Izmidliyan are mentioned. Registered as sons of Agop and shop owners at 14 Mumhane Street, the birth years and occupations of these Izmidliyan brothers are not indicated. This seal may possibly belong to the Izmidliyan Brothers who owned a shop in Arnavutköy.

Coins from Marmaray Yenikapı excavation (catalogue no. SK29-SK36)

Important data revealed by the excavations in Yenikapı as part of the Marmaray and metro projects, has shed new light on the history of the city. Because of the excavations at the Port of Theodosius I, the discovery of walls of Constantine I and Theodosius II with a gate as well as unearthed shipwrecks, small finds rich both in quantity and variety were found.

Included among the small finds revealing this commercially significant port, the majority of the coins (bronze coins) were too oxidized to be identified due to the humid environment in which they had lain.

The earliest identified coin is bronze (catalogue no. SK29) and was minted at Amorion (present-day Afyon-Emirdağ). The coin is dated during the reign of Emperor Geta (209-212 AD), a period which witnessed Byzantium-Istanbul's close connections to other cities during the Roman Era.

Among the coin finds, three gold coins (catalogue no. SK30-SK32) discovered together in the port's fill constitute a small treasure. These coins, from the time of Theodosius II and Pulcheria, are of particular importance because they illustrate Theodosius II's construction projects in this area. All three coins were struck in Constantinople between 402 and 422 AD, and there are few other examples of the coin of Pulcheria.

Another important coin-find is a large treasure comprised of 16th-century Ottoman *akçes*. The coins are oxidized into a lump, too corroded to be identified. Since the cleaning process of these coins has not been completed, these coins have not been included in the display.

³ J. P. C. Kent, *Roman Imperial Coinage*, v. VIII, London 1981, p. 442.

Coins

SK

Catalogue

ÜSKÜDAR EXCAVATIONS



BYZANTIUM

SK1

Constans II (641-668)

Obverse: DN CONSTA TINUS PPAN, II. Bust of Constans facing right, wearing a diadem, paludamentum, and cuirass.

Reverse: VICTORIA AVGVSTVS, with Cross over a globe.

AV Semissis, 6h, 2.15 g., 19 mm

Museum inv. no. 1813/2

Ref. DO II. p. 436, no. 44.3



SK2

Lead seal

Imperial Commercium of the Thynia Region (751-775)

Obverse: Facing busts of Constantine V and his son Leo IV. Each wears a crown with a cross-surmounted globe and wearing a paludamentum and cuirass. Above them a cross.

Reverse: Bust of Leo III crowned and wearing loros, holding a staff with cross, wearing the paludamentum and cuirass. In his right hand, he holds a cross-surmounted globe. There is an X on the left, Θ on the right. Below this is the line:

TWNBAC IAI Τῶν βασιλι-
KWNKOMME κῶν κομμε-
PKIWNΘY ρκιων θυ-
N(IA)C ν(ια)ς

Lead, 26/29 mm

Museum inv. no. 1784/4



THE OTTOMAN EMPIRE

SK3

Mustafa III (1171-1187/
1757-1774)

Obverse: Tuğra, (signature of
the sultan)

Reverse: duribe (struck) (8) / fi
(in) / Islambol / 1171

AR, Onluk. 25 mm, 4.07 g.

Inv. no. DN.1405/1

(MRÜ'05-355)

Ref. *Artuk II*, 1846



SK4

Selim III (1203-1222/
1789-1807)

Obverse: Tuğra, (signature of
the sultan)

Reverse: azze nasrehu (May his
assistance be powerful) / duribe
(struck) (9) fi (in) / Islambol /
1203

AV, Zerr-i mahbub quarter. 7/8
mm, 0.46 g.

Inv. no. 1424/1

(MRÜ'06-675)

Ref. *Pere*, 699



SK5

Abdülmeçid (1255-1277/
1839-1861)

Obverse: tuğra, (signature of
the sultan) / year 15

Reverse: azze nasrehu (May his
assistance be powerful) / duribe
(struck) fi (in) / Kostantiniye /
1255

AV, Hundred kurush. 22 mm,
7.18 g.

Inv. no. DN.1403/2

(MRÜ.05/389)

Ref. Pere, 870

**SK6**

Abdülaziz (1277-1293/
1861-1876)

Obverse: tuğra, (signature of
the sultan) / year 8

Reverse: azze nasrehu (May his
assistance be powerful) / duribe
(struck) fi (in) / Kostantiniye /
1277

AV, Five hundred kurush
34 mm, 35.93 g.

Inv. no. DN.1403/21

(MRÜ.05/391)

Ref. Artuk II, 2043

**SK7**

Abdülhamid II (1293-
1327/1876-1909)

Obverse: tuğra, (signature of
the sultan) / year 10

Reverse: azze nasrehu (May his
assistance be powerful) / duribe
(struck) fi (in) / Kostantiniye /
1293

AV, Hundred kurush. 22 mm,
7.20 g.

Inv. no. DN.1403/22

(MRÜ.05/406)

Ref. Pere, 97



FORMER SULTANAHMET PRISON



LATE ROME

SK8

Licinius I (308-324 A.D.)

Obverse: IMPLI CINIVSAVG
In helmet and cuirass, a right facing bust of Licinius I.
Reverse: VIRTUS EXERCIT Banner in center with VOT/XX, flanking the banner, two slaves, seated on the ground with their hands tied. TT in exergue.
AE, 6h, 3.84 g., 22 mm
Museum inv. no. 1751/6
Ref. RIC VII. s. 377, no. 116 (var).



SK9

Constantine I (307-337 A.D.)

Obverse: CONSTAN TINVSAVG
Laureled head of Constantine I facing right.
Reverse: DNCONSTANTINIMAXAVG, inside the laurel; VOT / . / XX / crescent (upward facing), TT in exergue.
AE, 12 h, 2.83 g., 18 mm
Museum inv. no. 1751/20
Ref. RIC VII, p. 381, no. 167 (var).



SK10

Constantine I (307-337 A.D.)

Obverse: POPROMANVS
Laurel-crowned bust of a representation of the Roman people, facing left. Dressed, with a Horn of Plenty above the shoulder.
Reverse: Double-tower bridge over a river, with a star (?) above, CONS / S between the towers.
AE, 6 h, 1.18 g., 15 mm
Museum inv. no. 1751/12
Ref. RIC VIII, p. 448, no. 21.



SK11

Constantine I (307-337 A.D.)

Obverse: POPROMANVS, similar to no. 3.
Reverse: Inside a laurel wreath, a star, below the letters CONSS.
AE, 12 h, 1.05 g., 14 mm museum inv. no. 1751/14
Ref. RIC VIII, p. 448, no. 22.



SK12

Fausta (wife of Constantine I)

Obverse: FLMAXFA VSTA AVG, A formally-dressed bust of Fausta facing right.
Reverse: SPESREI PVBLICAE, Spes (Hope), standing with her head facing right, holds two infants on her lap, RQT in exergue.
AE, 6h, 2.86 g., 18 mm
Museum inv. no. 1751/9
Ref. RIC VII, p. 330, no. 293.



BYZANTIUM

SK13

Basileus I (867-886)

Obverse:

ΒΑΣΙΛΙΟΣ ΕΤ ΟΥ ΕΣΤΑΤΑΥΓΓ

A bust of Basileus in crown and wearing loros, facing a bust of his son Constantine in crown and chlamys. Between them, they hold a cross of Saint Patrick.

Reverse: ΙΗ ΧΡΗΣΤΕΥΣ ΡΕΓΝΑΝΤΙ

ΧΡΗΣΤΕΥΣ, Jesus Christ seated on a lyre-backed throne, haloed with a cross, his right hand raised in blessing, holding a Bible in his left hand.

AV 6h, 4.34 g., 19 mm

Museum inv. no. 1797/1.

Ref. DO III, p. 488, no. 2a.1



SK14

Mikhael VII (1071-1078)

Obverse: + ΜΙΧ ΑΗΛ

ΡΑΙ ΛΟΔ

A bust of Mikhael in crown and wearing loros, holding a labarum and globus cruciger.

Reverse: Bust of Jesus Christ with a cross and halo; His right hand is raised in blessing, and he holds the Bible in his left hand. IC on the left, XC on the right.

AV, 6h, 4.34 g, 27/28 mm,

Museum inv. no. 1764/1

Ref. DO III, p. 804, no. 2a1



SK15

Three unstruck coins (10th-11th century)

AE, total 24.95 g,

25 mm each,

Museum inv. no. 1710/1



SK16

Unstruck coin (10th-11th century)

AE, 7.29 g., 25 mm,

Museum inv. no. 1710/2



THE LATINS (1204-1261)

SK17

Obverse: A/ΓI/O NI/K, Saint Nicholas, standing, with a halo, in the pose of an orans.

Reverse: (ΑΓΙΟC)

ΙΩ/ΟΠ/ΡΟ/Δ/Ρ, Saint John the Baptist, standing with a halo, holding the Patriarchate cross in his right hand, and his garment in left hand.

AE, 6h, 4.19 g., 26/29 mm

museum inv. no. 1751/62

Ref. DO IV, s. 688, no. 21.1



THE EMPIRE of NICAEA

SK18

Theodoros I (1224-1230)

Obverse: (ΑΓ I) O/C

Θ/ΕΟ/ΔΩ/Ρ, Saint Theodoros, standing with a halo in military costume, holding a spear and a shield.

Reverse: Theodoros I, standing, wearing a crown and wearing loros, holding a labarum in his right hand and a globus cruciger in his (left?) hand. Below on the left and center a star (double struck?)

AE, 6h, 3.63 g., 25/28mm

Museum inv. no. 1751/86

Ref. DO IV, p. 466, no. 11.1 (var).



EUROPE

SK19

France-Duchy of Burgundy: Hugo V (1306-1315)

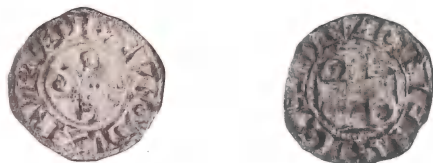
Obverse: + VGO DVX BVRG: DIE, Monogram.

Reverse: DIVIO LIENSIS, Cross.

Billon, 0.73 g., 18 mm

Museum inv. no. 1751/4

Ref. Fiala II, no. 11015.



THE OTTOMAN EMPIRE

SK20

Sultan Mehmed II, the Conqueror

(855-886/1451-1481)

Obverse: Mehmed bin Murad Han

Reverse: Halled Allah Mülkehu [duribe (struck)] Bursa

AE, Mangir. 11 mm, 0.93 g.

Inv. no. 1371/4 (SC.00/397)

Ref. Artuk II, similar to 1449



SK21

Sultan Süleyman the Magnificent

(926-974/1520-1566)

Obverse: decoration

Reverse: duribe (struck) /

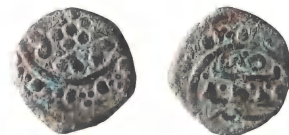
Kostantiniye / year / ...

AE, Mangir. 13/14 mm, 1.37 g.

Inv. no. DN.1382/39

(SC.01/Et.692)

Ref. Kabaklarlı, 10-Qos-61



SK22

Mustafa III (1171-1187/1757-1774)

Obverse: tuğra, (signature of the sultan)

Reverse: duribe (struck) (4) / fi (in) / Islambol / 1171

AR, Yirmilik. 32 mm, 9.43 g.

Inv no. DN.1382/21 (SC.01/277)

Ref. Pere, 636



SK23

Selim III (1203-1222/
1789-1807)

Obverse: tuğra, (signature of
the sultan)

Reverse: azze nasrehu ((May his
assistance be powerful) / duribe
(struck) (7) fi (in) / Islambol /
1203

AV, Zerr-i Mahbub quarter.

14 mm, 0.60 g.

Inv. no. DN.1425/1 (SC.06/1)

Ref. Pere, 699

**SK24**

Selim III (1203-1222/
1789-1807)

Obverse: tuğra, (signature of
the sultan) / duribe (struck)

Islambol / 1203

Reverse: sultanül berreyñ (sul-
tan of two continents) /
hakanül Bahreyn (ruler of seas)
/ essultan bin (4) / essultan
AR, Yüzlük. 44 mm, 30.80 g.

Inv. no. DN.1382/25 (SC.01/239)

Ref. Pere, 705

**SK25**

Abdülaziz (1277-1293/
1861-1876)

Obverse: tuğra, (signature of
the sultan) / year 4

Reverse: azze nasrehu (May his
assistance be powerful) / duribe
(struck) fi (in) Kostantiniye year
1277

AE, 40 Para. 37 mm, 21.42 g.

Inv. no. DN.1382/51 (SC.01/256)

Ref. Pere, 949



SEALS

SK26

Byzantine lead seal
Basil, Diakonos, basilicus
clericus and kharistikartes
of Saint Ananias
Monastery: 11th century

Obverse:

O	A
A	N
Π	A
O	N
C	I

Bust of Saint Ananias facing to the side

Apertures on mouth and neck similar to the ones on the sides, these apertures are opened to pull thread through.

Reverse:

+ KERΘ	+ Κ(ύρι) εβ(οή)θ(ει)
RAC IAEI.	Βασιλει(ω)
ΔΙΑΚΟΝΩΡ	διακόνω β(ασιλικω)
ΚΛΗΡ.ΚΤΪΣ	κληρ(ικ) του και
ΧΑΡΙ..ΙΚΑΡ,	χαρι(στ)ικαρ-
THCMONHC	της Μονης
ΤΟΝΑΓΙΟ	του Αγιο(ς)
.NANIA	(Α)νανία(ς)
- * -	- * -

28 mm

Museum inv. no. 1727/14



SK27

Ottoman seal used by
Teberdar Mustafa Efendi
on behalf of Esma Sultan
(Abdülhamid I's daughter)
(1207/1793)

İsmetli Esma Sultan / âli-
yü'sşan tâbi' / esseyid Mustafa
teberdar-ı saray-ı / atik
1207

(Mustafa Efendi, Old Palace hal-
berdier [teberdar] and servant
to the virtuous Esma Sultan of
great renown, 1207)

AE, 16/18 mm, 8.64 g.

Inv. no. DN 1371/22

(SC.00/193)



SK28

Ottoman seal of the
Izmidliyan Brothers
(19th-20th century)

"Izmidliyan Brothers" in
Armenian/Ottoman /Greek
AE, 24/43 mm, 42.46 g.
Inv. no. DN 1371/20
(SC.00/195)



YENİKAPI EXCAVATIONS



ROMAN

SK29

Phrygia-Amorion, Geta (209-212 A.D.)

Obverse: ΓΕΤΑC AVΓOYCTOC, Head of Geta facing right, laureled.

Reverse: AMOPIA ΝΩΝ, Winged Nemesis, standing, head facing left, her right arm bent to pluck chiton from her breast, her left hand lowered and holding a bridle, at her right foot a wheel.

AE, 7h, 7.48 g., 25 mm

Museum inv. no. 1819/1

Ref. BMC. p. 57, no. 55.

Pl. VIII 7.



LATE ROMAN

SK30

Theodosius II (408-450)

Obverse: DN THEODO SIVSP-FAVG,

Bust of Theodosius II in a helmet and cuirass, holding a spear and shield.

Reverse: CONCORD I AAVGGD, Constantine, seated on a throne and wearing a helmet, facing to the right, with scepter in her right hand and Victoria on a globe in her left hand. There is a star on the left, her left foot on the prow, CONOB in exergue.

AV, 6h, 4.36 g., 20/22 mm

Museum inv. no. 1798/1

Ref. RIC X, p. 253, no. 201.



SK31

Theodosius II (408-450)

Obverse: DN THEODO SIVSP-FAVG,

A bust of Theodosius in a helmet, in a cuirass, holding a spear and shield.

Reverse: VOTXX MVLXXX B, Victoria, standing and facing left, holds a long cross in her right hand, CONOB in exergue.

AV-Solidus, 12h, 4.34 g., 22 mm

Museum inv. no. 1798/2

Ref. RIC X. p. 256, no. 219.



SK32

Pulcheria (414-453)

Obverse: AELPVLCH ERIA AVG, Diademed bust of Pulcheria right, dressed and draped, cross over shoulder (graffiti: K in right field)

Reverse: Christogram in laurel, CONOB and star in exergue.

AV-Semissis, 6h, 2.20 g., 18 mm

Museum inv. no. 1798/3

Ref. LRC. No.444 .



BYZANTINE

SK33

Constantine VII – Romanus II (945-959)

Obverse: + IHSXPRESX RE
GNANTIUM, A bust of Christ
facing, with nimbus, right hand
in sling of his cloak raised in
blessing, a Bible in his left hand.

Reverse:

COSTANTINOCEROMANAVGG^{BR},
On left, a bust of Constantine
VII facing. On right, bust of
Romanus III, facing. They hold a
Patriarchate Cross between
them.

AV-Solidus, 6h, 4.42 g., 21 mm

Museum inv. no. 1783/1

Ref. DO III. p. 552, no. 15.9



THE OTTOMAN EMPIRE

SK34

Selim II (974-982/
1566-1574)

Obverse: decoration
Reverse: azze nasrehu (May his
assistance be powerful) / duribe
(struck) / Kostantiniye / year
980
AE, Mangır. 13/16 mm, 3.35 g.
Inv. no. DN.1426/3
(MRY'05-392)
Kabaklarlı, 11-Qos-22



SK35

Abdülmeçid (1255-1277/
1839-1861)

Obverse: tuğra, (signature of
the sultan)
Reverse: duribe (struck) (1) / fi
(in) / Kostantiniye / 1255
AV, Onluk. 15 mm, 0.78 g.
Inv. no. DN.1423/1
(MRY'06-2496)
Ref. Pere, 873



SK36

Abdülmeçid (1255-1277/
1839-1861)

Obverse: tuğra, (signature of
the sultan) / year 15
Reverse: azze nasrehu (May his
assistance be powerful) / duribe
(struck) fi (in) / Kostantiniye /
1255
AR, Quarter Mecidiye.
24 mm, 5.61 g.
Inv. no. DN.1426/2 (MRY'05-261)
Ref. Pere, 893



Abbreviation of publications on coins

Artuk II	Ibrahim-Cevriye Artuk, <i>Istanbul Arkeoloji Müzeleri Teşhirdeki İslami Sikkeler Kataloğu</i> , volume II, Milli Eğitim Basımevi, İstanbul 1970.
BMC	B. V. Head, <i>Catalogue of the Greek Coins in the British Museum, Phrygia</i> , London 1906.
DO II	Ph. Grierson, <i>Catalogue of the Byzantine Coins in the Dumbarton Oaks Collection</i> , v. II, Washington 1968.
DO III	Ph. Grierson, <i>Catalogue of the Byzantine Coins in the Dumbarton Oaks Collection</i> , v. III, Washington 1973.
DO IV	M. F. Hendy, <i>Catalogue of the Byzantine Coins in the Dumbarton Oaks Collection</i> , v. IV, Washington 1999.
Fiala	E. Fiala, <i>Collection of Ernst Prinz zu Windisch-Gratz</i> , Volume II, Prague 1897.
Kabaklarlı	Necdet Kabaklarlı, <i>Mangır Osmanlı İmparatorluğu Bakır Paraları, 1299-1808</i> , Uşaklılar Eğitim ve Kültür Vakfı Yayınları no. 1, İstanbul 1998.
LRC	Ph. Grierson-M. Mays, <i>Catalogue of Late Roman Coins in the Dumbarton Oaks Collection</i> , Washington 1992.
Pere	Nuri Pere, <i>Osmanlıda Madeni Paralar</i> , İstanbul 1968.
RIC VII	P. M. Bruun, <i>Roman Imperial Coinage</i> , v. VII, London 1966.
RIC VIII	J. P. C. Kent, <i>Roman Imperial Coinage</i> , v. VIII, London 1981.
RIC X	J. P. C. Kent, <i>Roman Imperial Coinage</i> , v. X, London 1994.
Zacos	G. Zacos-A. Vegliery, <i>Byzantine Lead Seals I</i> , Basel 1972.